

TRANSACTIONS

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Bengal Social Science Association.

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BENGAL SOCIAL SCIENCE ASSOCIATION.

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RULES.

OBJECT.

I.—The object of the Association is to promote the development of Social Science in the Presidency of Bengal.

MEMBERSHIP.

II.—Any person who pays an annual subscription of twelve rupees, or a life subscription of one hundred rupees, shall be a member of the Association.

III.—Every member shall have the right of attending and voting at the annual, quarterly, and special meetings of the Association, of being eligible to any of its offices, and of receiving a copy of its Transactions.

IV. The annual subscription shall be payable in advance on the first day of January in each year.

V. Any member whose annual subscription shall not be paid before the end of the year for which it is due, shall be liable to have his name struck off the list of members by the Council. When a member of the Association proceeds on a temporary visit to England, he shall not be considered thereby to have resigned his membership, unless he communicates his intention to do so in writing; but if absent for more than six months, he shall not be called upon to pay a subscription for any year during which he may be so absent.

VI. Any member desirous of withdrawing from the Association must communicate his wish to the Secretaries in writing, but he will be liable for the subscription of the year in which such communication is received.

VII. Upon the nomination of the Council, persons eminent for their knowledge of Social Science, or who have rendered important services to the Association, may, at an annual meeting, be elected honorary members of the Association. Honorary members shall have the same privileges as ordinary members, and they shall be exempted from the payment of an annual subscription.

OFFICERS AND GOVERNMENT.

VIII. The Association shall have a President, two Vice-Presidents, and two Honorary Secretaries, who are also Treasurers.

IX. The Association shall be governed by a Council, consisting of fifteen ordinary members, besides the above office-bearers. The Council may fill up vacancies in its own body as they occur during the year.

X. All office-bearers and ordinary members of Council shall be elected at the annual meeting, and shall hold office till the annual meeting next ensuing; they shall be eligible for re-election. (This rule shall apply to all officers elected by the Council during the year.)

XI. The Council shall ordinarily meet once a quarter, and when specially summoned together by the President of the Association, or at the requisition of any five members of the Council.

DEPARTMENTS AND SECTIONS.

XII. The Association shall be divided into four departments: the *first*, for *Jurisprudence and Law*; the *second*, for *Education*; the *third*, for *Health*; and the *fourth*, for *Economy and Trade*.

XIII. The Council shall divide itself into sections corresponding to the above departments. The President and Secretaries shall be *ex-officio* members of every section. Each section may appoint its own Chairman and Secretary, who, if not already members of the Council under Rule 10, shall have the right of taking part in its deliberations and of voting at its meetings.

XIV. The work of a section shall consist in collecting, classifying, and arranging the papers and information relating to its own department. For this purpose it may associate with itself other members of the Association.

SUB-COMMITTEES.

~~XV.~~ XV. The Council may also form other Sub-Committees of its body for special purposes, and such Sub-Committees shall also have the power of adding to their number other members of the Association. The President and Secretaries are *ex-officio* members of all Sub-Committees.

MEETINGS.

XVI. The meetings of the Association shall be annual, quarterly, and special.

XVII. The annual and quarterly meetings of the Association shall be held in Calcutta. The former shall be convened by the Council in January of each year, and the latter in the months of January, March, July, and November.

XVIII. Special meetings of the Association may be convened by the Council at such time and place and for such purpose as they shall think fit.

XIX. At the annual meeting of the Association, the President or one of the Vice-Presidents, shall deliver an address, and the general and sectional reports for the past year shall be read.

XX. The quarterly meetings of the Association shall be held for the reading and discussion of papers merely.

SECRETARIAT.

XXI. The Honorary Secretaries shall, by mutual agreement, divide the duties of their office between them, reporting such arrangement to the Council.

ACCOUNTS.

XXII. The accounts of the Association shall be audited by two members of the Association not being members of Council, who shall be appointed at the annual meeting.

XXIII. The funds of the Association shall be lodged in the Bank of Bengal, and cheques shall be drawn only upon the signature of the President (or one of the Vice-Presidents) and one of the Secretaries.

BRANCH ASSOCIATIONS.

XXIV. The Association shall correspond with, and affiliate to itself, Branch Associations established out of Calcutta.

XXV. As a condition of affiliation, Branch Associations shall pay to the funds of the Parent Association a sum of ~~£12~~ rupees per annum for each one of their members, in return for which such members shall be entitled to a copy of its transactions, and to the privilege of attending its meetings in Calcutta or elsewhere.

**BYE-LAWS FOR THE CARRYING OUT OF RULES
XIII AND XIV.**

1. The Chairman of each section shall preside at all meetings of the section, whether for the reading and discussion of papers, or for the transaction of ordinary business. The Secretary to the section shall report the proceedings.

2. So far as regards the collection, classification, and arrangement of statistics, and the consideration of communications, each section shall ordinarily be left to work independently of, and without interference by, the Council. But a report of its operations shall be furnished by each section to the Council at the close of every year in time for its incorporation with the annual report of the Council.

3. Each section shall be allowed to incur a contingent expenditure for printing charges, postage, and sundries, not exceeding Rs. 20 per mensem. Proposals to incur a larger expenditure shall be submitted for the previous sanction of the Council.

4. The Transactions of the Association shall continue to be edited as heretofore by the General Secretaries of the Association; but the report of the discussions upon any paper shall be drawn up and furnished to them by the Secretary to the particular section in which that paper was read.

5. If it is thought desirable to print any paper, either wholly or in part, before the meeting at which it is to be read, in order that copies of the paper may be distributed beforehand, and the discussion upon the subject thereby promoted, the section shall make an application to the Council; and if the printing be sanctioned, the paper shall be made over to the General Secretaries for that purpose.

REGULATIONS REGARDING PAPERS.

1. With a view to direct the communications of members and others into the most useful channels, the Council have drawn up certain heads of enquiry in each department. But it is not intended to confine discussion to these particular subjects; papers on other interesting topics which may occur to individuals, will also be accepted by the Council.

2. All papers should be sent to the Honorary Secretaries at the Metcalfe Hall, at least one month before the meeting at which they are to be read. On the first page of every paper

should be written the subject, and the name and address of the author.

3. As a rule, all papers shall be submitted by the General Secretaries to the section which they may concern, upon whose recommendation alone they shall be accepted by the Council, provided that, in special cases in which the President may think it conducive to the interests of the Society, he may, on the inspection of a paper, exercise his discretion in accepting it without previous submission to the section.

4. A paper will ordinarily be read by its author, or by some friend nominated by him for the purpose; failing such, it will be read by the Secretary in the particular department which it concerns.

5. Papers, when read, should be left with the Secretary to the department, by whom they will be returned to the General Secretary.

6. No paper already published can be read. No paper which has been accepted can be published privately, except by permission of the Council.

7. The Council may print any paper either in whole or in part, or may exclude any paper altogether from the Transactions, as they see fit. Members of the Association will be entitled to twenty spare copies of any papers which they may contribute.

8. All papers should be composed in as clear and concise a style as possible. They should be confined, as far as practicable, to the relation of facts and observations bearing upon the question, and should avoid, as far as may be, the enunciation of general principles and of philosophical theories and reflections. It is quite true that the promotion of Social Science demands that deductions should be drawn from ascertained facts, but it is believed that the requisite *data* have not yet been accumulated, and that the Association will, for the present at least, be most beneficially engaged in the collection of Social Statistics.

9. With a view to preserve the object with which general meetings of the Association are held,—*viz.*, the discussion of the subjects which may be then introduced,—no paper shall be read *in extenso* which will occupy more than a quarter of an hour in the reading, but in the event of the paper being longer, a *precis* or abstract shall be read instead. Such abstract shall be submitted for the approval of the Council, together with the original paper.

REPORT OF THE COUNCIL FOR THE YEAR 1870.

THE last Annual Meeting of the Association was held at the Town Hall, on the 10th February 1870. Dr. Norman Chevers, the late President of the Association, delivered an address. An important rule was passed at this Meeting, authorizing the election of Honorary Members; and Miss Florence Nightingale, Miss Mary Carpenter, and the Hon'ble Mr. Justice Phear were elected the first Honorary Members.

The Quarterly Meetings were held in February and March last. The first of these Meetings was held at the Town Hall on the 11th February, when Babu Peary Mohun Mookerjee, a zemindar of Ooterparah, read a paper, in the Section of *Economy and Trade*, on the Condition of the Bengal Ryot. He was followed by the Rev. J. Long, who contrasted the present social aspects of Calcutta and Bombay. The Meeting was adjourned till the 28th of February, when the business of the *Education* Section was commenced. The Rev. K. M. Banerjee read a paper on the merits of the different systems of transliteration of Indian names of persons and places; and the Secretary to the Section read, in the absence of the author, a paper on the subject of a popular literature for Bengal. The next Quarterly Meeting was held on the 31st March, when Mr. A. P. Howell, of the Civil Service and Under-Secretary to the Government of India in the Home Department, delivered an address on Primary Education, entitled "Some Remarks on the National Education League."

The above papers, together with the address of the President at the Annual Meeting, were published during the past year in a number of the Transactions of the Association, forming Vol. IV.

In June last, Miss Florence Nightingale favoured the Association with an elaborate paper on the question of Indian Sanitation, which has also been published in the above number of the Transactions. Agreeably to her wishes, the paper has been translated into Bengali, and will shortly be ready for publication. The Council take the opportunity to tender their cordial acknowledgments to the distinguished author for her most practical suggestions on a vitally important subject. They are glad to announce that the paper has also been translated into the vernacular at Bombay for circulation in that Presidency.

The number of Members of the Association is 219, of whom 14 are Life Members, and 3 Honorary Members, leaving as Paying Members, 202.

The financial position of the Society is very satisfactory. The sum of Rs. 1,641 was realized last year for ordinary subscription of Members, and Rs. 1,200 for life subscription; besides, a donation of Rs. 103-15-6 was received from Miss Florence Nightingale. The sale of the Transactions yielded Rs. 360, and the receipts for postage Rs. 17, making a total income of Rs. 3,321-15-6. The expenditure for the year aggregated Rs. 1,626-10-9. The surplus receipts have been invested in Four Per Cent. Government Securities for Rs. 3,000, leaving a balance of Rs. 861-5-0 at the close of the year for current expenditure. The amount remaining to be collected is Rs. 1,663, and the amount of liabilities is Rs. 59.

Several donations of books have been received to the library of the Association from the several Governments,

and from Miss Carpenter, to whom the best acknowledgments of the Association are due.

The Council beg to announce with sincere regret the resignation of the offices of Joint Honorary Secretary, and of President of the Association, by Mr. H. Beverley and by Dr. Norman Chevers, respectively. To both, the Association is deeply indebted for its present prosperous and influential position, and the Council take this opportunity of tendering them the warmest thanks of the Association for the interest taken by them in its well-being, and for the valuable services rendered by them.

On the resignation of Mr. Beverley, Mr. A. M. Broadley, of the Bengal Civil Service, was elected Joint Honorary Secretary. Soon after his appointment, however, that officer left Calcutta, and his place has been supplied by Mr. T. J. Chichele-Plowden, of the Bengal Civil Service.

Dr. J. Ewart has been unanimously elected by the Council to fill the office of President in the room of Dr. Chevers, which he has kindly consented to accept.

PEARY CHAND MITTRA,
T. J. CHICHELE-LOWDEN,

Hon'y. Secretaries.

CALCUTTA,
The 25th January, 1871.

Report of the Council.

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	Rs.	A.	P.		Rs.	A.	P.
To Balance in the Bank of Bengal on 1st Jan. 1870	2,127	12	6	By Printing and Advertisement	...	296	11 0
" " of Cash in hand on do.	11	4	9	" Subscriptions written off as irrecoverable	...		
" Subscription for 1867	Rs. 108			<i>viz.</i> —for 1867	Rs. 108		
" " " 1868	111			" " 1868	132		
" " " 1869	501			" " 1869	300		
" " " 1870	1,428			" Transactions account	540	0	0
" Life Subscription...	2,181	0	0	" " Establishment charges	452	12	0
" Donation received from Miss Florence Night-	1,200	0	0	" " Postage account	625	10	3
" " ingale ...	103	15	6	" Stationery and petty charges	47	11	6
" Transactions account	360	0	0	" Library account	123	6	0
" Postage account	17	0	0	" Meeting charges	32	0	0
				" Government Securities purchased	48	8	0
				" "	2,973	1	0
Total, Rs.	6,001	0	9	" Balance of Cash in hand	5,139	11	9
				" " in the Bank of Bengal	861	5	0
				Total, Rs.	6,001	0	9
ASSETS.				LIABILITIES.			
Balance of Bills for Subscription for 1868	64	0	0	Salary of establishment for December 1870	54	0	0
" " " 1869	399	0	0				
" " " 1870	1,200	0	0	Due to Messrs. Newman & Co. for stationery	5	0	0
1 Govt. Promissory Note No. 017082 of 1842-43, @ 4 per cent., for Rs. 2,000							
1 Govt. Promissory Note No. 032466 of 1865, @ 4 per cent., for " 1,000	3,000	0	0				
Total, Rs.	4,663	0	0	Total, Rs.	59	0	0

H. M. RUSTOMJEE,
RAJENDRA NATH MITTRA, } *Auditors.*

NILMONEY DEY,
Asst. Secretary.

BENGAL SOCIAL SCIENCE ASSOCIATION.

ADDRESS

BY

DR. JOSEPH EWART,

PRESIDENT OF THE ASSOCIATION.

[Delivered on the 2nd February, 1871.]

YOUR EXCELLENCY, LADIES AND GENTLEMEN,

As it is the custom for the in-coming President to inaugurate his assumption of the office to which he has been elected through the confidence and good will of his colleagues, by delivering an address, I shall endeavour to conform to the rule to the best of my ability. To have been able to dispense with this duty would have been congenial. But my own inclinations must be subordinated to the paramount claims of usage. My position, however, is one of extraordinary difficulty, following, as I do, two such able men as the Hon'ble Mr. Justice Phear and Dr. Norman Chevers, both distinguished for erudition, originality, eloquence, and philanthropy and humanity of the highest order. Still, though in the comparison I must stand at a disadvantage, I have, nevertheless, ventured to string together a few thoughts on two subjects intimately associated with the social advancement of mankind. Before proceeding to do so, permit me to tender my heartiest thanks to the members of the Social Science Association for the compliment offered in select-

ing me as their President, thus bestowing an honor as unexpected as it has been unsolicited and unmerited.

My first theme is the *Doctrine of Life*—a doctrine which, in all ages, must have engaged and agitated the minds of men. Before the discovery and skilful application of the microscope, and prior to the ingenious philosophical experiments of Francesco Redi, in 1668, the theory of “spontaneous generation,” or the theory of the reproduction of living from non-living matter, or as Professor Huxley has termed it, “abiogenesis,” was almost universally accepted by all classes of learned and unlearned men. It was then believed that the appearance of plants, under improved conditions of previously neglected soils, was the result of some occult combination of the elements of which they are composed, brought about independently of pre-existing living matter. Thus the new flora which was observed to spring up in place of the primeval forest which had been cut down for the purpose of supplying timber or fuel for the uses of man; or the clover and other species of plants and grasses which follow the drainage, reclamation, and cultivation of comparatively barren and waste lands,—were regarded as the products of spontaneous generation, or abiogenesis. Nay the development of infusoria, or of larger insects in water, or on meat undergoing putrefactive decomposition, was viewed as an exemplification of the generation of living from non-living matter. But we now know from the progressive advancement of science, and the enlargement of our means of observation in the shape of the microscope, that the new flora which succeeds the felling of the ancient forests; that the living beings which spring from organic infusions placed under favourable circumstances of light, heat, moisture, and atmospheric air or oxygen; and that the insects developed and reared in the early stages of their existence on decaying animal matter,—arise from germs themselves derived from parents which had preceded them. So tenacious were our ancestors, down to the seventh decade of the seventeenth century, of the notion that abiogenesis was a law of nature, and that the appearance of maggots and the metamorphoses of insects, generally, were recognised as instances supporting the hypothesis.

When the fallacy of the theory was demonstrated by Redi, so far as these reproductions were concerned, the extraordinary phases of some of the Entozoa, and other species of invertebrata, were still considered to represent an impregnable stronghold for the refuge of the abiogenic school, and to be altogether

inexplicable on any other hypothesis than that of independent or spontaneous generation. The researches of Steenstrup and Kuchenmeister, and the consequent establishment of the law of "the alternation of generations," have successfully assailed this fortress, and demonstrated the fact, that the method of reproduction of these animals is in strict conformity with the ordinary rule now shown to prevail universally, wherever the assisted vision can be brought to bear upon the investigation of biogenesis.

The germ of the *Medusa aurita*, frequenting in great abundance the coasts of Great Britain, is first recognised as a nucleated cell or bioplast, provided with locomotive cilia by means of which it can transport itself to a suitable distance from its parent. When it succeeds in discovering a favorable habitation, it attaches itself to any hard and fixed substance in the shallow bed of the ocean, and then becomes elongated. The ciliary processes or locomotive organs being now no longer required, become atrophied, and subsequently dispensed with altogether, whilst the body of the animal undergoes enlargement in all directions. In the third stage, the lower position becomes constricted, and a series of tentacula are developed from the upper and expanded part of the creature. These arm-like processes represent prehensile organs. They are used for the seizing and collection of food. The animal, during this stationary period of its career, presents all the appearances and habits of a hydra-form polype. At this period, buds are frequently developed, which eventually undergo detachment, and each of these assumes an independent career. The further growth of this young *Medusa* is characterized by rapid increase in length, wrinkling or corrugation of its stem, and by proportionate multiplication of the prehensile tentacula. Then the margins of these corrugations assume a notched appearance, so that the animal resembles a pile of jagged saucers placed upon one another, the highest saucer being surmounted by a crown of tentacles. As this developmental process advances to completion, these saucer-like divisions are separated, and each becomes subsequently formed into a perfect *Medusa*, endowed with considerable powers of locomotion.

In the *Sarsia*, reproduction is also effected by means of germs which pass through a series of gradations, similar to those of the *Medusa aurita*. In its polypoid stage, instead of the final act of development being accomplished by a division of the substance of the whole body into a series of segments, each of which even-

tually becomes converted into a perfect prototype of its primary progenitor, the young brood spring from the trunk of what was formerly regarded as a mere hydra-tube, by a number of budding processes, which, in course of time, drop off and grow into medusiform animals.

Professor Von Beneden has shown that an analagous mode of generation is illustrated in the reproduction of the cestoid worms. The cystic worm (scolex) in its quiescent condition, and securely ensconced within the tissues of another animal, corresponds with the simple hydra-form polype. The compound animal, in the shape of the tapeworm, infesting the alimentary passages of another animal (strobile), is analagous to the elongated polypoid creature undergoing gradual division into segments. And the mature separate segment (proglottis) is, biogenetically, comparable to the active *Medusa aurita*. The experiments and philosophical investigations of Kuchenmeister and others have reduced these opinions to positive demonstration.

To facts such as these, we owe the enunciation of the law of the "alternation of generations" by Steenstrup, who defines it as follows:—"The fundamental idea of the words 'alternation of generations' is the remarkable, and till now inexplicable, phenomenon of an animal producing an offspring, which at no time resembles its parent, but which, on the other hand, itself brings forth a progeny, which returns in its mature form and nature to the parent animal, so that the maternal animal does not meet with its resemblance in its own brood, but in its descendants of the second, third, and fourth degree of generation. And this always takes place in the different animals which exhibit the phenomena in a *determinate* generation, or with the intervention of a determinate number of generations. This remarkable *precedence* of one or more generations, whose function it is, as it were, to prepare the way for the later succeeding generation of animals destined to a higher degree of perfection, and which are developed into the form of the mother, and propagate the species by means of ova, can, I believe, be demonstrated in not a few instances in the animal kingdom."

• When our investigation is prosecuted to the utmost extent possible at the present day, the great doctrine of Redi—*omne vivum e vivo*—receives confirmation rather than refutation. But just as this doctrine was attacked, when objects of less than the $\frac{1}{1000}$ th of an inch could not be measured and described, so is it now

assailed in that vast field of nature tenanted by an uncountable number of living organisms measuring less than the $\frac{1}{100000}$ th of an inch in diameter.

A century ago, when portions of living matter, of dimensions smaller than the $\frac{1}{400}$ th of an inch, could not be seen by the aided vision, the advocates of spontaneous generation or abiogenesis assumed that the animalculæ and fungi, which sprang from organic infusions, originated independently of the presence of pre-existing living germs. But, in recent times, the improvements in the construction of magnifying powers have enabled us to clear up much of this previously unexplored region, and the result has been the discovery of innumerable germs, or specks of living matter, measuring less than the $\frac{1}{100000}$ th of an inch in diameter, identical, in every particular, in composition, habits, and powers of development, growth, and reproduction, with the parents from which they have been derived, either by a process of biogenesis, or by the law of the "alternation of generations." So that it may now be affirmed that, as far as microscopical investigation—which has already covered a field of research and observation hitherto unparalleled—has enabled the pioneers of physical science to penetrate into the mysteries of biology, the doctrine of biogenesis has, without exception, met with the most irrefragable support, whilst the advocates of abiogenesis have been driven to seek refuge in reasoning and the region of the *invisible*.

Dr. H. Charlton Bastian, in his comments on Professor Huxley's remarkable Address read at the last meeting of the *British Association for the Advancement of Science*—an address in which the doctrine of biogenesis was most ably handled—observes that the Professor "does not attempt to deny—he does not allude to the fact—that *living things may and do arise as minutest visible specks in solutions in which, but a few hours before, no such specks were to be seen.* And this," continues Bastian, "is in itself a very remarkable omission. The statement must be true or false, and if true, as I and others affirm, the question which Professor Huxley has set himself to discuss is no longer one of such a simple nature as he represents it to be. It is henceforth settled, so far as visible germs are concerned, that living things can come into being without them. It can now, at all events, be said that *some* living things do not come from *visible* germs. Who, therefore," asks Bastian, "in the face of this fact, will say that the doctrine—*omne vivum e vivo*—remains unshaken?" This line of argument is devoid of novelty.

It is precisely the same as has always been adopted by the abiogenic school. It is identical with that which was preached by the opponents of Redi's doctrine immediately after its promulgation, and which continued to be utilized, as each position of refuge was taken up and abandoned in consequence of the demonstrated extension of the foundations on which biogenesis is based. It has never been denied that "multitudes of minute living things may, and do gradually, appear in fluids, beneath the microscope, where no visible germs previously existed." It has only been asserted that there may be vast numbers of living germs, which, owing to their almost atomic minuteness, have never been observed by the aid of the highest magnifying powers which have as yet been invented. But just as within a range or domain of assisted vision represented by microscopes, magnifying objects to such an extent that living matter varying in size from the $\frac{1}{200}$ th to the $\frac{1}{100000}$ th of an inch in diameter can be brought under ocular observation, there is reason to believe that, when a still greater magnifying power is commanded, germs which are now *invisible*, and therefore regarded by Bastian and his followers as possibly originating, *de novo*, in obedience to the hypothesis of abiogenesis, will be laid under contribution in corroboration of the all-pervading law of biogenesis. The burden of proof, doubtless, rests as much with the one side as with the other. It is not easy to understand how the undisputed fact "that living things may and do arise in minutest visible specks in solutions in which, but a few hours before, no such specks were to be seen," in any way materially affects the question at issue in favour of the theory of spontaneous generation. But what has, to my mind, been successfully combatted, is the assumption that,—because minute specks of living matter appear in the field of the microscope, in solutions which are, to our imperfectly aided vision, homogeneous, or destitute of visible particles,—these are originated, *de novo*, from matter devoid of vitality and the reproductive properties appertaining to living things.

The biogenic school, in discussing this question, are free to admit that "the subject is one in which direct demonstration must give place to reasoning," although experiment and observation may and must be brought forward in support of this; because, so far as scientific investigation has yet proceeded, the reasoning and experimental demonstration cannot be said to be opposed to their cause. For there is every logical reason to believe that, as the present aids to man's vision are further improv-

ed and amplified, living matter, which cannot at present be observed, owing to the limitation of our means, will eventually be subjected to visible examination. All precedent is in favor of this view. Suppose, for the sake of example, that a microscope were invented possessed of such a magnifying power as to render objects of less than the $\frac{1}{1000000}$ th of an inch in diameter visible, do not reasoning, analogy, precedent, and experiment go to support the opinion that such an instrument would bring into view a vast population of organisms, germs, and living beings inhabiting an extensive region hitherto unexplored, and which, for want of adequate means, have never been observed by man in their early biological career? If so, then are not the supporters of biogenesis entitled to contend that living things do not arise *de novo*? For, as is admitted by Bastian, "in 999 cases out of a thousand"—he might have said in a thousand cases per thousand—"which come under actual notice there cannot be a question that a living thing originates from a pre-existing living thing." Nor is it doubted that a rule of such apparently universal application is most likely to be the rule which applies to any questionable case. "Much," says Bastian, "is made out of this argument, which is, of course, a very valid one as far as it goes." Now considering that, according to Bastian's own admission, the rule applies to 999 cases out of every thousand known cases of generation, and that as has already been stated, the exception is only to be sought for in regions which are acknowledged to be invisible, most people would have regarded it as unimpeachable, and viewed his assumption, without any satisfactory proof whatever, that living things may appear in minutest visible specks from non-living invisible matter contained in homogeneous organic or colloidal solutions, as problematical in the extreme. When he puts the interrogatory—"Have we not seen, indeed, that the most accomplished biologist, provided with the very best microscopes hitherto made, though he gets down to a minimum *visible* stage of less than $\frac{1}{1000000}$ th of an inch in diameter, is just as powerless in face of the hypothesis of invisible germs as those who worked with the rude microscopes which alone were in vogue two centuries ago?" he does not seem to recognise the fact that the law of biogenesis has always been reinforced by the revelations which have followed the substitution of the best microscopes of the present day for the rude and imperfect ones used two hundred years ago; and that reasoning from such precedent, and the 999 cases out of a thousand, it is very naturally inferred, that the doctrine will be still further

substantiated as our aided vision becomes more and more extended.

Science is greatly indebted to Bastian for the illustrations he has furnished in proof of the wonderful tenacity of life possessed by the minutest forms of living matter. He exposed organic fluids to a higher temperature than they had ever been subjected to by previous experimenters, in hermetically closed flasks, and in *vacuo*, and yet he found, after a time, that organisms made their appearance in them. But his conclusion, that these vitalized productions originate, *de novo*, by a re-arrangement of the elements of which they are composed, from dead matter, is open to question. Because the theory propounded by him, to the effect that all life had been extinguished in the germs suspended in these fluids by exposure to such an elevation of temperature and exclusion of the atmosphere, is not proven. We are not as yet in a position to declare at what temperature the influence of life ceases in some of the lower forms of pre-existing living matter; nor can we say, with exactness, how long the germs of the lower orders of animalcules and plants may lie dormant, when altogether excluded from the vivifying power of the atmosphere, until, under favoring circumstances, the active processes of life may be again manifested.

It is, however, well known that the lowest forms of living matter are endowed with marvellous powers for resisting the extremes of heat and cold, and averting absolute extinction, as living organisms, before they have succeeded in perpetuating the species to which they belong. Here, we cannot fail to note the great purpose which these beings fulfil in the economy of nature. But for their ceaseless development, growth, and reproduction, the total conversion of living into non-living matter, or organic into inorganic compounds, would, in course of time, become an accomplished fact; and the vegetable and animal life covering the earth, and abounding in the atmosphere and in the ocean, would become a thing of the past. These organisms live and thrive on the confines where the scenes of the transition of organic into inorganic matter are to be demarked. Whether visible to the aided vision, or invisible under the highest powers which have hitherto been employed, their great function is to prevent the transition from being completely effected, by assimilating to themselves matter from both the organic and inorganic kingdoms, and to fit themselves to be utilized for the nutrition and maintenance of other beings of a more elevated type and organization. Just as the little polypes, which build

up the great coral reefs in the bed of the sea, are most active and resistless, where the danger is at its maximum, or where the reefs are most exposed to the waves of the stormy deep, and succeed in presenting an effective barrier against the encroachments of the ocean, so that the little tiny, gelatinous-looking builders may be allowed to proceed in their work of raising up vast masses of coral rock without molestation, so do these minute forms of animal life pervade every part of the globe, the atmosphere, and the waters of the great deep, where the change from organic into inorganic matter is most imminent, or going on most rapidly with a view to put a limit upon this metamorphosis of matter, and to refit it, under the operation and influence of the wonderful something or property or principle of matter, which we are pleased to call life, for the nutrition of their own microscopical bodies and the continuation of the species. So minute are many of these beings that they cannot be observed by the best aids to vision hitherto invented. If, therefore, it must be conceded that these creatures are so small that our best powers fail to make them visible, how incomparably smaller must be the germs of living particles which effect the reproduction of the race. But though they are so small, the important functions which they perform, are secured by the vastness of their numbers. The immense accumulation of life represented by these uncountable billions of living beings may be imagined, when it is stated that the existence and perpetuation of the visible fauna and flora of the globe are mainly dependent upon their ceaseless activity, development, growth, and unfailing reproduction.

That Bacteria spring from the minutest specks, which appear in homogeneous organic solutions where no specks could previously be observed, is unquestionable. "Being motionless and diffused," says Bastian, "their number cannot be accounted for by any supposed rapidity of multiplication—the only possible explanations seem to be, either that the specks have originated from as many pre-existing germs which were invisible, or else that they have proceeded from material collocations which have been initiated in the fluid itself by virtue of the molecular properties of the substances in solution, and the physical forces, or sum total of conditions acting thereupon." Coinciding with Bastian in the opinion that this is really the question which has to be disposed of, every upholder of biogenesis is, nevertheless, at issue with him as regards the conclusion at which he has arrived, because the best aids to vision do not enable us to

watch the progressive changes undergone by invisible germs. Once, however, they become visible, under favoring conditions of heat, moisture, and temperature, their further development and growth can be examined and determined with facility. There is no good necessity shown for admitting that the beings which spring from solutions exposed to great and prolonged heat, or contained in hermetically-closed flasks, have originated independently of pre-existing germs. This being the state of the case, there is no valid reason for making much of Bastian's admission that "similarly such specks are the only forms of living matter which are supposed to be capable of arising *de novo*." Before he can claim support for the hypothesis of abiogenesis, it is incumbent upon him to satisfy his opponents that the temperature to which he subjected organic solutions was sufficiently high to prove absolutely fatal to all the living matter or germs contained therein; and that his means and appliances were so perfectly adjusted and arranged as to ensure the exclusion of the atmosphere, which, as Pasteur and Tyndall have demonstrated, is, under almost every conceivable condition and circumstance, known to be abundantly charged with both visible and invisible germs. I submit, that until this is done, there is no reasoning which is sufficiently potent to warrant the abandonment of Redi's doctrine—*omne vivum e vivo*, or as the immortal Harvey puts it—*omne vivum ex ovo*.

"But if," says Huxley, "in the present state of science, we are offered the alternative either of believing that germs can stand a greater heat than has been supposed, or that the molecules of dead—for no valid or intelligible reason that is assigned—are able to re-arrange themselves into living bodies, exactly such as are produced in another way, I cannot understand how our decision can be, even for a moment, doubtful. In expressing this conviction, I must, nevertheless, guard myself against the supposition that I intend to suggest that no such thing as abiogenesis has occurred in the past, or will in the future. I think it would be the height of presumption for any man to say that the conditions under which matter assumes the properties we call 'vital,' may not some day be artificially brought together. All I feel justified in affirming is that I see no reason for believing that the feat has been performed as yet. And looking back over the past, and finding no record of the commencement of life, I am devoid of any means of forming a definite conclusion as to the conditions of its appearance. Belief in a scientific sense is a serious matter and needs strong

foundation. To say that I have any belief as to the mode in which the existing forms of life have originated would be using words in a wrong sense. But expectation is permissible where belief is not; and if it were given to me to look beyond the abyss of geologically recorded time to the still more remote period when the earth was passing through physical and chemical conditions, which it can no more see again than a man can recall his infancy, I should expect to be a witness of the evolution of living protoplasm from non-living matter. I should expect to see it appear under forms of great simplicity, endowed, like existing fungi, with the power of determining the formation of new protoplasm from such matters as ammonium, carbonates, oxalates and tartrates, alkaline and earthy phosphates, and water, without the aid of light. That is the expectation to which analogical reasoning leads me; but I beg you once more to recollect that I have no right to call my opinion anything but an act of philosophical faith. With these limitations, Redi's great doctrine of biogenesis appears to be victorious along the whole line at the present day."

To regard the numerous species of animals and plants now clothing and ornamenting the globe as having been originated *de novo*, at some remote period of the world's history, by chance, accident, fortuitous or spontaneous generation, without the intervention of the agency by which matter itself must have been made or created, is simply to countenance the grossest materialism, and to strike at the very foundations of religious faith. Fortunately, as has been shown, the data upon which it has been attempted to support such a doctrine as this, may, with truth and justice, be utilized to uphold a totally opposite conclusion. For a preponderating balance of scientific testimony is favorable to the doctrine of biogenesis; and, if time be only conceded, it may still be confidently contended that natural science and religion are in no sense antagonistic or irreconcilable.

In every department of animated nature, the scientific investigator has, wherever vision and sound reason have been permitted to have full sway and fair play, succeeded in revealing examples of Contrivance and Design. Whether his investigations have been carried on in a domain within, or altogether beyond the range of aided vision, or in regions where reason supported by analogy and precedent is alone available, the rule is maintained with unswerving fidelity. Not only is this so in the animal and vegetable kingdoms: in the formation of the rocks, in the constitution of the crust of the earth, the ocean and the

atmosphere, and in the ceaseless changes to which these are subjected, we observe the operation of laws, which, like matter itself, were originated, and are now regulated and directed by an omnipotent central power. Thus, in the inorganic kingdom, properly so called, in the construction and habits of the flora and fauna of the globe, we everywhere "see the strongest evidence of Design, and amidst much apparent difference of form and obvious diversity of purpose, the biologist recognises a remarkable unity of plan, affording incontestable proof that the whole was devised by One Mind infinite in wisdom, unlimited in resource."—*Beale*.

My next theme is *the urgent necessity for the introduction, into the schools preparing students for the Entrance Examination of the University of Calcutta, of the study of the rudimentary principles of Natural and Physical Science*. The grand defect in the general educational system of India is the almost total absence of the means of teaching this department of science. Yet the man must be blind, indeed, who does not recognise the wonderful revolutions and changes which have been effected in the world's history by means of the full development and growth of this kind of knowledge. It is to intellectual and physical training in this direction that we owe the telegraph, the railway, steam communication by sea, and the construction of such works as the Suez Canal and other gigantic engineering undertakings of vast importance to the welfare of the human race. It is to the practical adaptations of such scientific knowledge to meet the wants of civilized man, that England owes much of her greatness and power of doing good. It is owing to the eminence of her sons in the various walks of science, that she is mainly enabled to maintain her high and unrivalled position in the scale of nations. We see the truth of these statements in the excellence of our military and naval armaments, in the development and extension of agriculture and commerce, and in the multiplication and augmentation of our national resources and prosperity. Yet, notwithstanding these patent advantages, is it not strange that no pains should have been taken to introduce the study of Natural and Physical Science into the schools of India, training students to qualify for the Entrance Examination, and that the University system exacts no knowledge of the

kind from those who annually appear at this Matriculation Examination?

The reason which has apparently been urged in justification of this exclusion of Natural and Physical Science from the education of the youths of India, is that the University has found very great difficulty in weighing the competing claims of various branches of knowledge and in selecting those which are considered best for general educational purposes. There is, therefore, it is said, a natural reluctance to press the claims of particular studies, the admission of which might involve the abandonment of other studies which, as a means of mental training, have been preferred upon mature deliberation. The advantages to be gained by the teaching of the rudiments of science is not denied. It is feared that the students would not have sufficient time to devote to science consistently with the profitable study of the other subjects laid down in the University curriculum. And it is argued that, as these branches of knowledge are more important for the purposes of intellectual training, science must be excluded accordingly.

It seems to me that the University and educational authorities have never fairly grappled with this question, and that they have not yet realized the length, breadth, and depth of the essentially important object aimed at by such men as Fayer, Oldham, and Blandford, in their endeavours to have the first principles of science taught in the schools throughout the country. What these gentlemen and those who support them contemplate is simply to have imparted to students, preparing for the Entrance Examination, elementary instruction in Natural and Physical Science, analogous, or approximating, as nearly as possible, to that which is demanded from lads being trained for the Matriculation Examination at the London University,—or at a period or stage of general education of the youth of the country, altogether antecedent to the further stages of professional study, in any of the collegiate institutions affiliated to the Calcutta University. For whilst, to the general run of students, the study of the common principles of Experimental and Natural Science would be of inestimable value in promoting the development, growth, and vigour of the mental faculties and in perfecting the powers of observing and recording facts, it ought, consequently, as has been recommended at home, to take rank with mathematics in the winning of prizes and honors. Constituting further the very alphabet and grammar of the sciences, such training is absolutely essential to those students

who, after Matriculation, may determine to pursue the callings of Medicine and Engineering.

Since the Entrance Examination of the University requires no knowledge of Natural and Physical Science, the general education conferred cannot be viewed as adequate to the immediate requirements of professional training. Of the simplest technical terms, or of the causes of the most ordinary phenomena, the students have not the remotest idea. Thus, when, by virtue of having passed the Entrance Examination—which does not even demand the most trifling knowledge in scientific branches of study—the students present themselves at the affiliated institutions for the prosecution of the higher branches of science, they come charged with book-knowledge alone, and without the slightest pretension to any acquaintance whatever with the facts of Physical Science. Their memories have been abnormally developed and cultivated, whilst the faculty of observing and understanding the phenomena of every-day life; of collating certain facts, and deducing from these the true position of cause and effect; or of making practical use of the eyes and hands which God has given them,—is comparatively dormant, because it has been ignored and neglected. Their memories are, therefore, disproportionately developed at the expense of the other equally important faculties of the mind. The result is just what might have been expected—the out-turn of bookworms as the rule, where these ought to be the exception, or the substitution of too much theoretical for practical learning. Page over page of scholastic text-books can be recited to an extent which would appear prodigiously astounding, if the causes producing such a phenomenon were not well understood as the inevitable consequence of the nature and kind of teaching conferred. The limited and superficial character of much of this training is manifest from the fact that, in too many instances, the students are unacquainted with the real meaning of the passages which they can readily spout from Goldsmith, the History of India, and so forth. The evils of such a system of education as this do not become immediately apparent in those gentlemen who resolve to pursue the study of law in the affiliated colleges. But even here the cultivation of the mind is manifestly partial, one-sided, and illiberal. It is devoid of the fertilizing and reproductive elements which are contributed by indoctrination into the principles of Physical Science. There is too much sameness and monotony, whilst the salubrious tendency of a liberal rotation of subjects, in the culture of the juvenile intellect, is

unappreciated and overlooked. The education of the entire body of pupils is thus deteriorated to a deplorable extent. But this defect is most unmistakably recognised in those lads who, after Matriculation, elect for the pursuit of the scientific professions.

The instant these young men enrol themselves as candidates for the profession of Medicine or Engineering, it becomes at once apparent that their preliminary education has been quite inadequate to the immediate requirements of professional training. The professorial arrangements, in the engineering and medical schools, for the conveyance of instruction, *after* Matriculation, are in the main excellent and unimpeachable. But it must be manifest that no efforts which the professor of any given subject can make will enable him to compensate for the absolute want of any previous scientific training in the general educational institutions below—a blank which places those students who may select the future study of the sciences collateral to Medicine and Engineering, in the colleges appointed for the purpose, in the same unfortunate position as a freshman of Oxford would be situated, were he permitted to undertake the cultivation of the higher classics without having already mastered the alphabet and grammar of those classical languages. All that is demanded is that medical and engineering students should be sent up to us after they have been drilled in the alphabet and grammar of science.

According to the present state of things, the student's first year's residence at the medical and engineering schools is neutralized by his ignorance of the simplest terms and principles of science. His time, which should be devoted, during the first session, to the complete mastery of the fundamental branches of science, collateral to medicine and engineering, is principally occupied in familiarising himself with the rudimentary principles and the signification of technical terms. He has been suddenly launched into a *terra incognita*, and he is called upon to combine scholastic with collegiate instruction, at a period when the university curricula really demand that his whole time should be exclusively devoted to the cultivation of the highest branches of study indicated therein. An amount of labor is thus devolved upon the student, which is incompatible with the attainment of the leading object contemplated by the exactions of the University,—namely, that the time spent in studying Medicine and Engineering should be exclusively employed in receiving professorial instruction in conformity with the standard of our model—the London University. It is as impossible for our students to successfully amalgamate, during their collegiate

career, scholastic with professorial learning, as it is for the professor to unite, with his own, the arduous and laborious duties of the schoolmaster. These functionaries have special works to perform. In their respective spheres, the importance of their duties cannot well be over-estimated. Omission or dereliction of duty, on the part of either, is fatal to the soundness and integrity of the edifice they are instrumental in building up. Unless collegiate training begin with a soil, prepared and fertilized to the requisite extent and degree in the lower schools, it must stand at a great disadvantage, and the results must be proportionately imperfect.

It is stated in the University Calendar that, at the Entrance Examination, every candidate shall be examined in the following subjects:—

I.—LANGUAGES.

English, or one of the following languages:—

Greek.	Bengali.
Latin.	Ooriyah.
Arabic.	Hindi.
Persian.	Urdu.
Hebrew.	Burmese.
Sanskrit.	Armenian.

II.—HISTORY.

Outlines of Ancient History, of History of India, and of General Geography, with a more detailed knowledge of the Geography of India, &c.

III.—MATHEMATICS.

Arithmetic.

The four simple Rules; Vulgar and Decimal Fractions; Reduction; Practice; Proportion; Simple Interest; Extraction of the Square Root.

Algebra.

The four simple Rules; Proportion; Simple Equation; Extraction of the Square Root; Greatest Common Measure; Least Common Multiple.

Geometry.

The first four books of Euclid, with easy deduction.

To this list I would add, as soon as it may be deemed practicable to do so—

IV.—NATURAL AND PHYSICAL SCIENCE.

Mechanics; Hydrostatics; Hydraulics; Pneumatics; Acoustics; Optics; Chemistry. Botany and Physiology to be optional.

A small text-book comprising a condensed and intelligible account of the rudimentary principles of these branches of science might soon be prepared. When the important object of this innovation is borne in mind, the additional expenditure that might be involved in introducing the change, scarcely merits much consideration, especially if, as is believed, the duty of conducting instruction in the sciences might, as a general rule, be assigned to the most eligible of the existing educational staff. And since the devotion of a few hours every week to the experimental illustration of scientific principles and laws will, in all probability, be found amply sufficient to convey the amount of knowledge of “common things” required, there need be no fear lest the introduction of the subject of Natural and Physical Science into the system of general education throughout the country should interfere with, much less involve the abandonment of, any other branch of study now considered to be necessary to qualify the student to meet the requirements of the Entrance Examination of the University.

Before concluding this Address, permit me to make a few general observations regarding the objects contemplated in the foundation and maintenance of this Association. Its leading aim is “to promote the development of social science in the Presidency of Bengal.” Sociology is a term of comprehensive signification. It is not a mere branch of knowledge. It is not, therefore, to be compared with an ethnological, philological, geographical, geological, meteorological, or any other logical society, each of which is restricted to the cultivation and advancement of a distinct branch of science. Our Association assumes a more elevated position; and through the industry and philanthropy of its working members belonging to every persuasion of religious faith and branch of science, its cardinal object is to utilize, as far as may be practicable, the entire range of the sciences, with a view to promote the social, moral, and intellectual amelioration of mankind. A society, founded on such a broad basis as this, and inviting the assistance of ladies and gentlemen of every creed and race, ought to command the confidence and support of all the educated classes of the commu-

nity. In its ranks, religion or nationality receives no special favor or recognition. The aristocracy of knowledge is alone allowed to demand precedence. It constitutes a social republic or "parliament," in which he who succeeds in doing the best work must inevitably take the foremost place.

In truth, the Bengal Social Science Association, whilst urging no claim to executive or administrative power, nevertheless endeavours to possess a real influence in assisting the development, growth, and diffusion of useful knowledge, and by collecting and classifying facts, in contributing to the formation of a sound and healthy public opinion on questions intimately interwoven with the dearest interests of the people and of those who have been appointed, under Providence, to lead, to guide, and to rule over them. Careful in guarding the interests of the few occupying the vanguard of civilization, and of those entrusted with the administration of the affairs of the Empire, one of its highest principles is, and must continue to be, to consult the welfare, happiness, and prosperity of the many. Hence, wherever physical and mental poverty is to be found, it will be the paramount duty of the Association to make every reasonable exertion to alleviate, mitigate, or remove the blemish, and to substitute in its place, vigorous, physical, and intellectual development and growth.

Whilst striving to facilitate the accomplishment of this grand result, we must bear in mind that "Rome was not built in a day;" and that the material and intellectual progress of India has, during the past two decades, been altogether unrivalled during any corresponding period of its history. Our difficulty, if not our danger indeed, now consists in attempting to force on too rapidly, —and without adequate consideration for vested interests and traditions,—innovations and reforms, somewhat before the people, whom they directly affect, are in a state of educated preparation to receive them. There is scarcely a reform which has been met with a storm of opposition, which, with a little more time, and a very great deal more of education, would not have been accepted with general acclamation and without reservation.

There is an impression sinking deeply into the hearts of all educated men in this country that, with one notable exception, India now needs repose, or a small amount of breathing time. That exception is education, which, though advancing, is, when measured with the wants of the country, only to be likened unto a drop in the vast ocean of ignorance almost everywhere pervading

the land. Hence it follows that every well-wisher of India must hail with a hearty welcome the fixed and, I hope, unalterable determination of Government to make an attempt to educate the masses of the population. And if this noble resolution be carried into execution, without starving high class education, if both high and low education be conducted simultaneously, harmoniously, and in co-ordinated order, as they doubtless can and ought to be, without the progress of either being in any way impeded or endangered, but each mutually reacting in assisting the other, the ultimate result will redound to the infinite credit of our rulers, by equalizing as much as possible, and so far as knowledge is capable of doing so, the opportunities of the masses for the attainment of intellectual training and distinction; and prove an enduring monument to the justice and benevolence of Government, as it must prove an everlasting benefit to the teeming millions of men and women owing allegiance to Her Majesty—the Empress of India.

Your Excellency, Ladies and Gentlemen, I have now to tender to you my most cordial acknowledgments for the patient attention with which you have listened to the observations which I, in the fulfilment of rather an arduous duty, have considered it right to make on the present occasion.

JURISPRUDENCE AND LAW.

1.—*On the Examination of Witnesses in Mofussil Courts.* *By Baboo PEARY MOHUN MOOKERJEE.*

To any one who is familiar with the working of our courts of justice, the reluctance evinced by every native, educated or uneducated, high or low, to be examined as a witness in court, is a matter of daily experience. This feeling appears to be the more singular as perjury is supposed to be a crime of not unfrequent occurrence in Bengal, and even professional witnesses are supposed to be not very rare. So intense, however, is the general feeling on the point, that advantage is not uncommonly taken of it to satisfy private grudge by enforcing the attendance in court of persons whom the citing party has not the remotest idea of examining as witnesses; and where both the litigant parties are influential men, or where there is a large number of partisans on either side, each party delights in citing as witnesses the friends of his antagonist, how ignorant soever they may be of the subject of litigation. Cases have even been known in which the power enjoyed by suitors in this particular has been used as a means of extortion, and in which people have been only too glad to purchase by a pecuniary consideration, exemption from those troubles and annoyances to which witnesses are, rightly or wrongly, believed to be subject; and cases are still more common of persons absconding from their homes and sojourning in distant places till the danger is over.

Considering all the circumstances connected with the examination of witnesses, we cannot wonder at the intensity of feeling which is thus generally manifested. With some, the bare taking of the name of God with a full knowledge of all the frailties of our nature and with the possibility of making an untrue statement through defective memory or through confusion of ideas, is in itself a sinful act; and though similar con-

siderations do not weigh with the majority of those who hesitate to give evidence in court, there are circumstances enough to make the position of a witness in our courts a repugnant one. The poor witness's danger commences from the very time the summons is issued for his attendance in a cause. With a view to gain time, and to prolong litigation, the suitor takes care that the summonses are not actually served on all the witnesses cited by him, and that at least a few of them are returned to court either with the remark that the witnesses could not be found, or that they had absconded to evade the service of the process,—so that the evidence of a servant of the plaintiff or the defendant, corroborated by the interested testimony of the court peon, might condemn the witness to prison, or subject him to a fine; but fortunately this provision of the law is not always rigidly enforced, and recourse is had to the more lenient procedure of issuing a proclamation for the attendance of the supposed recusant witness. We will not view the witness's position in a worse light than it generally is by supposing that even the proclamation is purposely kept back from his knowledge, and that ulterior measures in the shape of attachment of his property and committal to a criminal court are resorted to. Although these latter measures are adopted in several cases, we will suppose that the proclamation has the desired effect, and that the witness finds himself constrained to attend the court. When he is once in court there is no knowing when his troubles would cease. In more than five cases out of ten the trial is not conducted on the day fixed for the same, but is put off from day to day, and from week to week, for a period which might extend to several months. If the witness lives within a few miles of the court house, and can command cheap and easy means of communication, he can repair to the court daily or on the appointed days from his home, but if he is not so fortunate, he is obliged to reside temporarily in the vicinity of the court house to the detriment of his daily avocations, and exposed to all the inconveniences and privation of a temporary residence in town. If one were to hear the supplications daily made by parties and their witnesses for the trial of cases on the appointed days, one should suppose that our Mofussil judiciary are self-constituted distributors of charity and not of justice, and that they are the masters and not the servants of the public. Happily our courts are daily becoming more cautious and considerate than before in fixing days for the trial of cases, and more punctual in trying the cases on the appointed days.

We shall suppose these preliminary trials to be at an end, and

that the witness is fairly in the box ready to undergo his examination. An impression generally prevails in the Mofussil bar that, excepting in criminal cases, the examination of witnesses is a minor task. There is scarcely one case in a hundred in which the pleader prepares himself for conducting the examination of witnesses, or even reads the brief before the case is ripe for argument. The task is usually left to a junior pleader, who carries the witness through his evidence as set down in the memorandum furnished by the mookhtear. While in England witnesses have many motives for stretching their story to the attorney—the love of being important, the desire of being taken to the Assizes and paid for pleasure trips—a witness in this country, on the other hand, tries to make himself as immaterial and unimportant as he can to the suitor and his mookhtear, in the hope of being released from the disagreeable position of a witness. The memorandum of evidence with which the pleader is furnished is, therefore, in many cases, as different from what the witness actually says under the sanction of a solemn affirmation as anything can be. A mass of irrelevant matter is thus introduced into the record of the case, while perhaps the most material points on which the witness could have given his evidence are altogether left out of sight. All that ingenuity and caution that are required in conducting the examination-in-chief—to bring out, for example, statements from a witness who says too little, and to keep another who says too much closely to the points for which he is required; to manage skillfully an adverse witness, and yet not to violate the principle by which one cannot discredit one's own witness—are as a rule practically unknown in the Mofussil courts. Should the witness by mistake make a statement which is damaging to the cause he has been cited to prove, the ignorance of the pleader of the facts of the case disables him from trying to put the witness in the way of refreshing his memory and correcting his error. One great evil of this haphazard way of examination is that it produces disagreement of witnesses in important particulars, for instead of weighing for himself the legal sufficiency or otherwise of the evidence adduced by two or three witnesses to prove a cause, the pleader examines as many witnesses as the party or his mookhtear in his anxiety desires to be examined; and thus instead of the unvarying statement of two or three witnesses, there is usually in the record of a case nine, ten, or even fifteen or twenty statements on the same point, which, from various causes, oftentimes disagree with and contradict one another. It is owing to these apparently trivial causes that the testimony of a

witness who may be perfectly honest and truth-telling not only conflicts with the other evidence in a case, but appears to be wanting in that frankness and honesty which require not simply the truth but the whole truth to be disclosed. From the very nature of the examination the testimony is defective on some points and unnecessarily prolix on others, and it is in this position that the pleader leaves the witness to be dealt with by his adversary in cross-examination.

The cross-examining pleader, being usually as ignorant of the circumstances of the case before it is ready for argument as the pleader on the other side, is unable to discern the merits of the questions put to the witness in his examination-in-chief. Several leading and irrelevant questions are asked unopposed in the examination-in-chief, while some introductory questions are perhaps hotly protested against, and when his turn comes he is obliged to proceed on an aimless cross-examination on the statements made by the witnesses without being aware of the bearing which those statements have on the case. Sometimes he contents himself by relying on a set of questions furnished by his client or his mookhtear, the object of which is in many cases to show that the witness is a ryot or a dependant of the party by whom he has been examined; that he has given evidence in different courts half a dozen times, or that he is a member of a hostile village faction. From its very nature the cross-examination which is thus conducted generally partakes of the character termed the *savage* style of cross-examination. Instead of beginning by giving the witness credit for good intentions and trying to elicit the truth by making him believe that he might himself have been deceived, the pleader tries to make out contradictions by confusing the honest and brow-beating the timid. The result of such a course is evident. It kindles defiance in the breast of the witness, places him on his guard, and thus destroys in many cases the only chance of weakening the force of his testimony in favor of the other side. Not one of the least disagreeable consequences of such a treatment in the witness-box in a country where discretion is usually reckoned to be the better side of valor, is to create and confirm that repugnance to give evidence in court which we have noticed at the outset.

The court itself plays no unimportant a part in bringing about the mass of incomplete and unsatisfactory evidence which is usually found in the record of a case. Confident that all the material points would be drawn out by the pleader by his examination-in-chief, and that all irregular questions would be

objected to by the pleader on the other side, its sole care generally is to see that the examination of each witness does not take up more time than what is ordinarily allotted to it. But this indifference is comparatively harmless. It is far less injurious in its consequences than the over-zeal, very much akin to a pre-determination of a case before the evidence is closed by both sides, which induces a court to take upon itself the task of conducting the examination-in-chief or the cross-examination, and to humour or to browbeat the witness according to its pleasure. The effect of such a conduct is unmitigated evil, as the court by its very position, and its almost absolute power, can commit an ignorant witness, whether honest or dishonest, almost to any statement which it wishes him to make. The circumstance, however, which exercises the most pernicious influence on the suitors, the pleaders, and the witnesses, and tends in no small degree to debase the national character, is the opinion which the Mofussil courts generally choose to entertain that all persons examined in courts are, with rare exceptions, dishonest witnesses. This opinion not only finds a vent in the judgments of all grades of courts, but also in a most objectionable manner during the examination of witnesses by way of such remarks as these,—“I know very well what you have come to say;” “Do make haste, and finish what you have been taught to say;” “I know full well what weight to attach to the evidence of witnesses in this country.” Nothing can be more clear than that this light assumption of dishonesty creates a disgust for courts in the minds of the honest, and a recklessness about untruth in the minds of the wicked. The treatment which the witnesses receive at the hands of the court and of the pleader, and the estimate which is thus hastily and uncharitably formed of their evidence during their examination, would have long convinced suitors of the utter worthlessness of oral testimony in this country, and dissuaded them from examining numbers of witnesses in each case, did not the written judgments of the courts in some measure contradict their oral observations and show that although a court may choose to insult them by discrediting all the witnesses in a case during their examination, yet that, in its written judgment, it generally believes all the witnesses examined on one side, and discredits the evidence of the witnesses on the other. It is not uncommon to find a court state in support of its judgment that a large number of witnesses have satisfactorily proved a certain fact; and it is, therefore, no wonder that suitors should think that there is more weight in the sworn testimony of twelve or fifteen.

witnesses than in that of two or three only, and that they should compete with one another in enlarging their list of witnesses and in examining a much larger number of them than is, in most cases, necessary. The demeanour of witnesses often furnishes the criterion on which the courts base their decisions as to the credibility of witnesses, and from the vast number of decisions in which this criterion is relied upon, one should suppose that our Subordinate Judges, Moonsiffs, Magistrates, and Deputy Magistrates are all either acute phrenologists, or at least persons who are peculiarly gifted with the power of reading the minute shades of the feelings and emotions from the bare features. Even the merest tyro in the art of judicial investigation thinks himself qualified to discriminate the placid audacity of a professional witness, the embarrassment of falsehood, or the bewilderment of a tutored witness who has lost the chain of his story, from the calm dignity of truth, the flutter caused by the novelty of a court scene, or the hesitation caused by defective memory, and to indite his verdict of belief or disbelief on a witness or a number of witnesses from the expression of their countenance during examination. It is, however, strange that one should find in the decisions of our courts the demeanour of one and all the witnesses examined on one side regarded as truthful, and that of all on the other side as false and embarrassing, as if the party who wins has always the rare good fortune to secure as witnesses persons who are neither embarrassed by the novelty of their position, nor ruffled by the irregular and sometimes insulting cross-examination to which they are subjected, while the cast party has always the misfortune not to be able to procure a single professional witness who can simulate the frank expression of truth, or even an unscrupulous one who can calmly narrate his taught testimony. What more can conduce to lessen the respect due to courts than to find one's sworn statements lightly estimated and wantonly disbelieved? The fact of the appellate court, on a consideration of the documentary evidence and of the probabilities of a case, coming, many a time, to a conclusion, on the credibility of the oral testimony on the one side or the other, very different to that of the court which had the opportunity of marking the demeanour of witnesses, furnishes a sad corroboration of our position. But the anomaly is inevitable in a country where the training for the judicial service is undergone simultaneously with the discharge of its duties, and where an appeal on the merits from the verdict of the court of original jurisdiction is not merely an unobjectionable but a necessary procedure.

Examination of Witnesses in Mofussil Courts. 7

The way in which the evidence of witnesses is recorded is also not free from objection. In taking down the testimony of witnesses the one sole aim of the court and of its amlah should be to take down the evidence as much as possible in the language of the witness. Owing, however, to the unhappily wide difference which exists between the spoken and the written language of the natives, and owing, moreover, to a desire on the part of the court and of its amlah to record the evidence in what they suppose to be correct language, instead of in the coarse but graphic colloquial in which it is usually delivered, that which the witness says appears in a materially modified form in the record, while the time taken in chastening the language of an answer to a question and writing it down, enables a dishonest witness to draw upon his imagination for explanations on points in which he has been well nigh pushed in cross-examination to the verge of a contradiction. It is well known, moreover, that, in many cases, the only safe criterion whereby to detect taught testimony consists in the difference of the language of the tutored witness to that of one who makes an *extempore* statement. This criterion is, however, altogether lost under the system of recording evidence which obtains in the Mofussil, and the evidence of the taught witness usually appears on paper in an aspect very different to that in which it is viewed by those who happen to mark his language during examination. The case is still worse in the criminal courts. The above remarks apply with double force in criminal cases in which the evidence of witnesses is not taken down in the language in which it is delivered, but only the substance of it in a foreign language. The translations being effected by first impressions by gentlemen who, whatever their qualifications in other respects, are generally very indifferently acquainted with the idioms and phrases of the language in which the witnesses are examined, their fidelity is always doubtful; and there being no record of what the witnesses actually say, they may be construed, at least in the appellate court, to say a thing very different to that which they did really say.

Nothing can be more deserved than the high encomium which is usually passed on the ability, honesty, and independence of the members of the Mofussil bar and of the gentlemen who preside over the Mofussil courts. But our highest tribunals are still as loud as ever in their expressions of displeasure at the manner in which the evidence of the witnesses is taken in the Mofussil, at the mass of irrelevant matter which is generally allowed to be introduced into the record as legal evidence, and

at the unscientific and sometimes wanton manner in which the estimate of conflicting oral testimony is made. Amid progress and improvement on every side, the mode of examination of witnesses still continues a standing reproach; and while by the spread of education orthodoxy in religious and social questions is gradually giving way to more liberal ideas, the reluctance to be examined as a witness in court is daily getting a greater hold on the mind of every Hindoo.

EDUCATION.

1.—*The Improvement of Indian Women*: by BABU KESHUB CHUNDER SEN.

[Delivered on 21th February 1871.]

MR. PRESIDENT, LADIES, AND GENTLEMEN,—

In order to estimate aright the social and domestic economy of the Hindus, it is necessary to take into account not only their present condition, but also their earlier history. For the Hindus are not a nation of yesterday; they boast a most ancient and glorious civilization. What we see around us to-day is a fallen nation—a nation whose primitive greatness lies buried in ruins. Its national literature and science, its theology and philosophy, its industry and commerce, its social prosperity and domestic simplicity and sweetness, are almost numbered with the things that were. As we survey the mournful and dismal scene of desolation—spiritual, social, and intellectual—which spreads around us, we in vain try to recognize therein the land of Kalidas, —the land of poetry, of science, and of civilization. In order, therefore, that we may understand the real character of the Hindus, in order that we may practically ameliorate their condition, it is necessary to have a correct knowledge of the social institutions and customs which existed in ancient times in this country. A right knowledge of the early history of India will supply a permanent and strong basis upon which to uprear national civilization. Now that the surges of a most aggressive civilization from the West are beating against native society, it is expedient that all social reformers should endeavour to steer clear of the “Scylla and Charybdis” of opposite extremes. Indeed, there are some who believe that the best way to reform India is to supplant and destroy all that is native, and to introduce Western civilization in its entirety and fulness. There are, on the other hand, those who try to drive back the tide of Western civilization, and always protest against everything European and foreign. In my humble opinion, the elements of

oriental and occidental civilization should, as far as possible, be blended together, and neither should be rejected. In spite of her shortcomings and wants, India seems to me to occupy at the present moment a most advantageous position in regard to her future advancement and reformation. Behold her sitting at the confluence of two mighty rivers, and gathering the priceless riches of truth which are flowing down the streams—the products of Eastern civilization and Western thought, of ancient wisdom and modern enterprise. All that is great and good in ancient Asia and modern Europe seems to be coming through these different channels for the benefit of our great country. It is necessary that we, natives of the soil, should take advantage of this circumstance. Whether we undertake the religious, or social, or intellectual advancement of the country, we should consistently avail ourselves of both these sources of improvement. It is our duty and our interest to preserve all the valuable truths, all the wholesome social customs and institutions which belong to our country, and at the same time gratefully to accept all that is offered to us by Western nations. The battle which was strenuously fought here some years ago between the Anglicists and the Orientalists in the sphere of education, and which at last ended in a compromise, has, I believe, to be fought in every department of native improvement, and must be similarly decided. You are, no doubt, aware how that great controversy has been finally settled by the educational authorities. The Government and the Universities are now trying to afford facilities to the study of Sanskrit, while at the same time the greatest encouragement is given to the cultivation of English literature and science. If we are at all sincerely anxious to promote the true advancement of our country, we should adopt the same principle in every department of reform, and combine the elements of Eastern and Western thought, the civilization of ancient and modern times. Nowhere, indeed, in the world do we see such a singular juxtaposition of these different elements as we behold to-day in India. In their union lies the secret of our future greatness. In this country, reformation, in order to be true and abiding, must not only mean a new civilization, but also a revival. It must not be a mere introduction of Western customs, but a resuscitation into new life of the lingering vitality still to be found in the social organization of the Hindu community.

Whatever is true of other departments of improvement and reformation applies with peculiar force to the subject which is

under consideration this evening. It would be really ungenerous and unfair to say that India has always been opposed to female improvement, simply because a few inhabitants on the banks of the Ganges protest against it to-day. Transport yourselves back in imagination hundreds of years ago, and you will find in the earlier writings and practices of this great nation emphatic protests against those injurious customs which we are now endeavouring to suppress; and positive injunctions and precepts in support of the reforms which are most needful. In the Vedantic period, in the Brihadaranyak Upanishad we come in contact with sacred and impressive dialogues on immortality between Maitreyi and her husband Yajnavalkya, in which these passages occur: Maitreyi said, "My lord, if this whole world full of wealth belonged to me, should I become immortal thereby?" "No," replied Yajnavalkya; "as is the life of fortunate people so shall thy life be. There is no hope of immortality by wealth." Maitreyi said—"What should I do with that which cannot make me immortal?" In a later period we find in the code of Manu high ethical precepts enjoining the necessity of female education, and of respect for the fair sex: "Where women are honoured, there the deities are pleased; but where they are dishonoured, all religious acts become fruitless." "In whatever family the husband is contented with his wife, and the wife with her husband, in that house will fortune be assuredly permanent." "By confinement at home, even under affectionate and observant guardians, they are not secure, but those women are truly secure who are guided by their own good inclinations." We have some excellent passages in Mahanirvan Tantra:—"Rear up a girl also in the same way and give her education with great care." "So long as a girl does not know how to honour and serve a husband, and is ignorant of moral discipline, her father should not give her away in marriage." Such passages as these clearly and authoritatively sanction the education of girls and their marriages at a proper age, and denounce the false logic which supports the custom of seclusion that has prevailed in Bengal and other parts of this country for some time past. But it is not merely precepts, but also examples, which we see in the early history of the Hindus. It is impossible to deny that women of exemplary character lived in this country, who adorned and purified Hindu homes, and exercised an ennobling influence far and wide. Their names are still cherished with respect and gratitude, and, I may say, in some cases with reverence, in many a Hindu family at the present day. In the early period

of the Upanishads, Maitreyi, whom I have already mentioned, and Gargi, took prominent parts in religious and philosophical inquiries and discussions, and were devoted students of theology. In the two Hindu epics are represented such illustrious characters as Sita and Savitri, Draupadi and Damayanti, who shed lustre on Hindu mythology, and whose purity and devotion to their husbands Hindu ladies of the present day always reverentially emulate. The scientific acquirements of Khana and Lilavati have rendered their names famous in Indian history, and have always challenged admiration. The former was deeply acquainted with astronomy, and her "sayings" are familiar words in every Hindu household. Lilavati had a profound knowledge of mathematics. The work called after her name was written by her father, Bhaskar Acharya, for her benefit. At the present day many students of mathematics in this country find in that work much to edify them. In later times we find in Southern India the name of Avyar, a celebrated moral philosopher, who was also versed in geology and medicine, and whose moral treatises are still studied in Tamil schools in the Madras Presidency; Mira Bai, an extremely devout Hindu woman, whose religious books are read with great avidity and interest by the adherents of the Vaishnava sect; Hati Vidyalkankar, who founded a school at Benares, and gave unmistakable proofs of her knowledge of logic and metaphysics; and last of all, Ahalya Bai, whose administrative ability and philanthropy are well known. Many other such names might be brought forward. Those already adduced are, however, sufficient to bear irrefragable testimony to the progress of female education in ancient times. But alas! many of the good customs of the earlier Hindus have fallen into desuetude in the course of time. The people have greatly degenerated and deteriorated, and there are signs of intellectual and social degradation on all sides. The present condition of the country it is, indeed, sad to contemplate. Darkness covers the land. The intellect of the nation has been paralyzed, and its higher aspirations and impulses have decayed. We no longer see those pure, sweet, and happy Indian homes, where our ancestors enjoyed the pleasures of social and domestic life, and the higher pleasures of spiritual communion. The condition of Hindu women is miserable.

A revival took place exactly half a century ago, when some Christian Missionaries, fired with zeal in the cause of truth and female improvement, stood forward even at the risk of incurring odium and obloquy, and tried to diffuse the blessings

of enlightenment among the native female population in Calcutta. Miss Cook, afterwards Mrs. Wilson, arrived in Calcutta in 1821, and in the course of a year established eight schools, containing 214 girls. She was indefatigable in her exertions, and thoroughly attached to the cause which she took up. These schools were subsequently amalgamated and incorporated into the "Central School." This school was established in the year 1826, and it is worthy of remark that an opulent native gentleman, Rajah Baidanath, came forward and gave a donation of Rs. 20,000, in order to help those who were engaged in the cause of female education in establishing a suitable building for the school. Miss Cook laboured under the auspices of the Church Missionary Society for a long time, and it must be confessed, and gratefully too, that her labours were crowned with a large measure of success. But I must be permitted to remark at the same time that the pupils belonging to her District Schools were mostly recruited from the lower classes—the indigent classes of native women in and around Calcutta. It was therefore reserved for the Hon. Mr. Bethune, in the year 1849, to erect a building and found an institution for the special benefit of the richer and the middle classes of native women. The school was opened with *éclat* in this city. Many native gentlemen came forward and assured the founder of their interest in the undertaking, and promised him support. But still, somehow or other, the school did not thrive. Several years elapsed before it gained anything like a sound and firm footing. Gradually the first excitement of popular antagonism subsided, and the native mind began to appreciate more and more the benefits of female enlightenment, and to realize its importance and necessity. And thus in course of time the cause of female education gradually and slowly yet steadily prospered. During the last decade, we have the most convincing facts and figures to prove that the success which has crowned the efforts of the State, and of philanthropic Native and European gentlemen engaged in the cause, has far exceeded our most sanguine expectations. In the year 1860-61, there were only 16 girls' schools, with 395 pupils; but in the year 1869-70, the last official year, we find no less than 284 aided schools for girls, having 6,569 pupils. According to Mr. Howell's "Note on Education," it appears that there are throughout British India no less than 2,000 girls' schools, and upwards of 50,000 girls receiving education in such schools.

All these facts indicate the sort of progress which is to be

seen on the surface. That there are so many schools and so many girls receiving the benefits of liberal education, is indeed a matter for congratulation. But this is not all we have to say in order to prove the actual amount of progress that has been achieved. The under-currents of native feeling and thought, in the direction of progress and enlightenment, are indeed far more cheering and encouraging even than the external progress which we see on the surface, and which may be gathered from official reports. Go into an Indian zenana, and you will there find Hindu ladies who never came into contact with English governesses, reading Bengali books, and deriving much benefit with the aid of their husbands or brothers, and not only growing in intellectual knowledge, but also in faith and purity, and in general enlightenment. Is it not gratifying to see native ladies, though immured in the zenana, and beset with all the disadvantages of secluded life, casting away idolatry and all things unclean, along with ignorance and incorrect notions of men and things, and becoming wiser and better? Such scenes we behold, not in one or two exceptional families, but in many enlightened Hindu homes in Calcutta, and the large towns and stations in the mofussil. In fact, the light of knowledge has penetrated the strongholds of the zenana, and is enlightening those who would never come out to receive it. In the Central Bengal Division, under Mr. Woodrow, we find 1,327 native ladies receiving regular instruction in the zenana from what are called zenana teachers. All honour to such teachers! They are acting on a very important and liberal principle,—namely, if native ladies will not come to our schools, our schools must go to them: if they will not seek enlightenment in public schools, we must give them all those means and opportunities, and place those advantages and facilities at their disposal, which will enable them to receive the blessings of enlightenment in their own houses. Many a zenana teacher goes about visiting native families, and the results of the labours of such teachers are cheering and vastly encouraging. Several books that are on the table here, and also the brilliant specimens of needlework you see before you, show what an amount of progress has been made within the walls of the zenana of late years. Many of the Hindu ladies, who have made these things with their own hands, never received any training in a public school; nay, some of them never came under the influence of English governesses. For these reasons the books and works of art collected here are peculiarly creditable to those who made them. There is also an interesting monthly periodical called

the *Bāmābodhini Patrika*, which is published in Calcutta for the special and exclusive benefit of Hindu ladies, and is largely read by them both in Calcutta and in remote provincial stations. Hundreds of ladies are regular subscribers and readers of this journal, and if you open its pages you will find many valuable contributions from the pen of native ladies—charming verses, essays and dissertations upon moral and historical, and also scientific subjects. You will find too on the table books published by native ladies, some of them very highly creditable to the authors: 1—“Hindu Females”; 2—“Hindu Female Education,” and 3—“Vishwa Shobha,” by Kailas Basini Devi; 4—“Urvasi Natak,” by a daughter of a Brahmin; 5—“Padya Kishore,” by Bhubun Mohini Dasi; 6—“Kabita Mala,” by a Lady of a respectable family; 7—“Nari Charit,” by Martha Saudamini Sing; 8—“Manottama,” by a Hindu Lady; 9—“Vidya Daridra Dalani”; 10—“Nilnoliui Natak”; 11—“Chitta Bilashini,” by Kristo Kamini Dasi.

These facts indisputably prove that female education has been making steady progress, not only outside the zenana in public schools, but also in the zenana. These are indeed hopeful signs, and cannot fail to make us sanguine as regards the future of our great country. I do not at all agree with the remarks made by the Director of Public Instruction in winding up his report on native female education. “Altogether,” says he, “there is more that is disheartening than cheering in this branch of educational work.” Every one who has had an insight into zenana life must admit that this is far from correct. There are facts which conclusively prove that the mind of the Hindu woman has been roused and awakened to a sense of its degraded condition, and that in many Hindu families earnest-minded, gentle, accomplished and devout ladies are earnestly trying to throw off those fetters of spiritual and social restrictions, imposed by a crafty priesthood, which kept them down for many generations. Many a Hindu girl is beginning to feel that she ought to take advantage of that light of civilization and education which is being freely enjoyed by native boys in public schools. Even the unfortunate Hindu widow feels that she has been grievously wronged, and that she must have access to such means as will enable her to grow in enlightenment and wisdom, and attain social happiness. Amongst adult native ladies, girls and widows, there is a wholesome excitement, which is beyond the shadow of a doubt.

It must, however, be confessed that there are yet serious

obstacles in the way of female improvement, which we must successfully grapple with, and, if possible, overcome without any further delay. The work of female enlightenment and progress that we see around us is not so real, not so enduring, as it ought to be. The Hindu female mind is advancing indeed, but it advances only to a particular point, beyond which it cannot proceed. All our attempts and movements in this direction seem to have reached the boundary line, beyond which we cannot, under existing circumstances, take a single step, even if we would. This line must, sooner or later, be obliterated, before the work of native female education can be said to have made real progress. No permanent or abiding benefit can be expected, unless we lay the axe at the root of the tree of corruption and ignorance, and place the native woman in the wholesome atmosphere of moral and intellectual liberty and enlightenment. I have therefore thought it proper to come forward with a few suggestions of a practical character, which, if carried out, will, I believe, give the Hindu women that amount of real enlightenment and culture which they urgently require, and which will enable them to advance unfettered in the path of progress.

The first means to which I have to draw your attention is the establishment of **NORMAL SCHOOLS**. I am glad to inform you that two such schools have recently been established in the metropolis, one in connection with the Bethune Female School, and the other in connection with the Indian Reform Association. The latter institution at present contains thirteen adult ladies, who receive regular instruction in Bengali, English, and needlework, and, I believe, if they continue for a year or a year and a half only, they will be enabled to go out as tutoresses, and either take charge of girls' schools or give instructions to zenana ladies. There are two other such schools, one at Dacca and the other at Rampore, which, I am told, are not properly managed, but I hope they will improve in future. The importance of such schools is apparent and undeniable. We all feel the necessity of well-trained native female teachers, who would give instruction to zenana ladies, and also serve in the capacity of "superintending mistresses in public schools, governmental and private. The dull and dry teachings of male tutors are not suited to the female mind, and are not at all calculated to impart that special training which it needs. It is female teachers alone who can properly develope, exalt, and purify the female mind and reform female life. The necessity of such teachers, therefore, is manifest to every one who has thought over the subject at all,

and has had some practical experience in the matter. I cannot leave this part of the subject without mentioning, with cordial thanks, the name of Miss Carpenter, who, while here, gave a great impetus to the cause of female education, and opened the eyes, both of the educational authorities of this country and the Government, to the importance of Female Normal Schools. It was on her recommendation that the Government sanctioned an annual outlay of public money for the purpose of establishing and sustaining Native Female Normal Schools in the presidency towns in India.

Secondly, an Inspectress is very much needed, who might go and visit Hindu families, and see how the zenana teachers are doing their work. She should also inspect Government public schools for girls, and send periodical reports to Government as to how these schools are being managed. Such an Inspectress would do an immense amount of good, which cannot possibly be achieved otherwise in the present circumstances of the country. At present the Government cannot possibly take any notice of what is being done in the zenana, and no improvement is possible, simply because there is none to go there and report matters to Government and the public. If we have well-trained and efficient Inspectors who look after the Government and aided schools, we must likewise have well-trained and competent Inspectresses who would keep girls' schools, and especially the zenana agency, in a state of efficiency.

In the third place we require Adult Classes. So long as the pernicious custom of premature marriage exists in this country, Hindu girls must leave public schools before they have received anything like a sound education. They begin their education at the age of seven, and give up their studies probably at the age of nine or ten; and then when they have gone back to their own homes they find themselves surrounded by an atmosphere of ignorance, folly, and superstition, which paralyzes their energies, arrests the growth of their intellects, and prevents their prosecuting their studies further. Thus, native girls renounce their studies at a very early age, when in fact, in civilized countries, they are found to begin them. The only way to meet the difficulty of the case is to open adult female classes in central and convenient localities in large towns. We must take circumstances as they are. It will not do to say native girls must continue for five or six years more in public schools, if they wish to receive the benefits of enlightenment. We cannot be inexorable dictators in a matter like this. In the present state

of Hindu society, native girls must submit to the injunctions and directions of their parents and guardians, and, in conformity with the customs of the country, get married at a premature age, and shortly after sever their connection with public schools. If this is inevitable, and it must be so for some time to come, some means should be devised to meet the difficulties of the case. If the girls must enter the zenana, and make up their minds not to come out again, we must send teachers to them and give them the means of continuing their studies. Let the girls of five or six neighbouring families be collected together day after day in the house of a respectable native, and let a competent female teacher be appointed to give them systematic instruction. Thus we may have twenty or thirty small adult classes in different parts of Calcutta, where ladies of advanced age will be enabled to prosecute their studies freely, after leaving school, for any length of time they like.

Fourthly, we want secular teachers for the zenana. I have already given zenana teachers the credit which is due to them. I have given them the sincere and fervent thanks of my heart for what they have so nobly done and are doing. But at the same time we must not be blind to the fact that they are giving education with a view to make their pupils converts to Christianity. Certainly they are bound to do so, according to the light which is in them, and we should be ungrateful indeed if we went to the extent of interfering with their freedom of action, or throwing obstacles in their way. Let them have their course by all means; but at the same time we must call upon the Government to show their regard for that principle of religious neutrality which they are bound to carry out in all circumstances, not only for the education of males, but also for the education of women. It seems strange that in the present state of female education in India, there are no means or appliances whatever for giving secular instruction to the zenana ladies, under the auspices of the Government. The Government ought to employ competent and efficient European female teachers who would go about visiting Hindu families, and give secular instruction in literature and the sciences, just as has been done for many years—systematically and on principle—in Government Schools and Colleges for boys. If our boys receive secular education, why should not our girls receive it too? Is it not unfair that the Government should deny the zenana ladies secular enlightenment, while it is freely accorded to boys? I do not mean to say that the Government

should spread godless education far and wide, but I do believe that moral and secular instruction, if imparted in a truthful and devout spirit, will tend not only to purify the minds of native boys and girls, but also to reform the Indian household and adorn it with all those charms and embellishments of a moral and spiritual character which are at present most needed. I do believe the result of Government education has been the awakening of the native intellect to such an extent, as to draw it away from idolatry and superstition, and lead it into the path of liberal reform; and may we not expect the same favourable results in the sphere of female education? I think the educational authorities in India ought to take this matter into consideration. In fact, I cannot account for this anomaly, except on the supposition that the matter was never fairly represented to the Government. Now that the matter has been brought to public notice, I hope and trust that this great evil will be remedied, and this great want will be supplied without any further delay. It is to be hoped that a body of competent female teachers English and native will be trained up, who will give liberal education, in the strictest sense of the term—unsectarian, liberal, secular education—to Indian girls.

Fifthly, I propose visits to interesting places. What is being done at the present moment in England for the benefit of the working classes, ought to be done in India for the benefit of Indian women. Those who attend the Working Men's Institutes in England are now and then placed under the charge of competent and experienced scientific men, under whose guidance they go and visit public museums, libraries, and other interesting public places, and with whose aid they are enabled to learn many important scientific and historical facts. A similar experiment may be tried with great advantage in our country. Competent and experienced English ladies may occasionally invite together five-and-twenty native ladies and proceed with them to such places as the Asiatic Museum and the Botanical Gardens, and explain to them the varied and interesting objects that are to be found there, for the benefit of their minds and hearts, with illustrations. Such practical lessons will do them immense good, which no mere amount of book knowledge will ever be able to achieve. At present, immured in the zenana, they can have very little idea of what transpires outside the house; but if thus now and then they are introduced into such places as I have mentioned, they will be able to see with their own eyes the repositories of wisdom in the departments of art and science which have been handed down

from generation to generation ; and in the amplitudes of nature, they will survey flowers and vegetables, rocks and rivers, and whatever is beautiful and sublime in creation, which will expand their minds, destroy their prejudices, and make knowledge interesting to them. Lastly, I should suggest periodical examinations and distribution of prizes to accomplished and intelligent native girls, at stated times, under the auspices of the Social Science Association. This will no doubt afford great encouragement to Hindu ladies. They will be greatly encouraged if they learn that we are sincerely anxious about their welfare, and that we are ready to assist them with books and scientific instruments and apparatus as a reward for merit. There are many girls and ladies of advanced age in Calcutta who, under the auspices of the Bamabodhini Society, now receive handsome prizes for proficiency. I think Government and such influential public bodies as the Social Science Association ought to co-operate in a manner like this, and encourage merit with suitable rewards.

Ladies and Gentlemen, I have placed before you six simple and practical suggestions, which I hope and trust will be carried out without any difficulty. I honestly believe that they are not impracticable or Utopian. Nor do they require a large outlay of money to carry them into effect. If we sincerely feel the necessity of female improvement, I think it is quite possible, if we sit together, to devise proper means and take prompt steps to give effect to these proposals. If we cannot do anything in the matter, let us go to those who can help us with money or otherwise. Let us make proper and respectful representations to Government, if needful. With private liberality and aid, and with the countenance and support of such a society as the Social Science Association, and, above all, with earnest and vigorous personal action, much I believe may be done, and much I hope will be done in due time.

A few words to my countrymen. Very little indeed can be said on a stock subject like this. You have heard hundreds of discourses and lectures on female education. You all admit its necessity and its paramount importance. You entertain no doubt about that. It would be doing injustice to you, it would be a scandal to your intellect, to suppose that any appeal is needed at this moment to your feelings or your understanding in order to move and quicken you with a right motive to action in this matter. You all feel, in your every-day life, the necessity of giving proper training and education to the intellectual powers and

moral sentiments of those who are near and dear to you. You cannot with impunity keep down your ladies in a state of mental, social, and moral subjection. Any attempt to do so will recoil upon you with a terrible rebound. It is a matter in which our interests are indented with those of our wives, and sisters, and daughters. If we do them injustice and deny them their rights and privileges, such a course of conduct will inevitably and assuredly jeopardize our own best interests. It is not merely a question of charity and fairness, that we should educate our ladies. Even if we were to view it from a lower stand-point, that of mere self-love, we would find that it is our interest at the present moment, and not merely our incumbent duty, to educate and reform our wives and daughters. What John Stuart Mill has said with reference to female society in England, applies with peculiar force to our country. "The time has come," he says, "when if women are not raised to the intellectual level of men, men must be pulled down to the mental level of women." Or, to use the well-known words of the Poet Laureate—

"Woman's cause is man's ; they rise or sink
Together, dwarfed or godlike, bond or free."

Do you not feel in your daily life that your wives and mothers are great impediments, sometimes insuperable obstacles, in the way of your own intellectual and moral improvement? How many of you are anxious to go to England at this moment! But you cannot do so, because there are caste difficulties in the way, and the ladies of your household insist upon your strictly observing the rules of caste. There are many of you who would cut asunder at this very moment all those ties and fetters which bind you to Hindu idolatry and superstition. But you dare not take a step in advance, simply because your ladies are in your way. Give them education, and they will prove helping-hands. They will not only learn what is right, they will not only accept right convictions in their own hearts, but they will also render you valuable practical aid, and prove your companions in the higher enterprises of life. At present there are educated fathers and uneducated mothers, enlightened husbands and illiterate wives. There are conscientious and pure-minded and earnest-hearted fathers, but their daughters are being trained up by their superstitious mothers in the midst of falsehood and impurity. Try to remove such anomalies, and by educating your mothers, wives, sisters, and daughters,

bring them up to your level. As you are marching forward and endeavouring to place yourselves in the front rank of civilization, take your female relatives with you; then the amelioration of the country will be complete. At present only half of the population of India is receiving culture and enlightenment. But the effects of such reformation among the male section of the community are to a great extent neutralized by the want of education among the women. By educating women we would reinforce our own energies, and with mutual co-operation elevate and reform our country. I do not exhort you to adopt rash and premature steps in furthering the work of female improvement. Do not force upon your ladies anything like false refinement. Do not endeavour to bolster up a meretricious refinement upon the unstable basis of outlandish customs. Try to establish the roots of reform deep in the soil of India. As in religious, so in social reformation, try to make the work of advancement gradual and steady, but on the whole, national and enduring. Anything that you do from no higher motive than the imitation of foreign nations, must sooner or later die away; but if you call forth the latent resources of the native mind, you will promote true and solid national civilization. It has been my good fortune to study the secret of English domestic purity and social happiness in England, and my observations and experiences have fully convinced me that England is what she is on account of the superiority of her ladies. I had the pleasure to associate with accomplished and devout ladies in many cities and towns in England; and indeed I naturally felt inclined to transfer to my country those exemplary traits of female character which I saw with my own eyes in that distant country. But how can that be done? Not if you merely imitate the exterior of English life; not if you try to adopt the superficial refinement of outward customs and manners, nor if you convulse native society into spasmodic movements with fitful outbursts of youthful zeal. It is your duty to enter into the spirit of true English refinement, and judge for yourselves whether England's greatness consists in observing the outward laws of social life, or in conforming to that system of moral and spiritual discipline under which every heart ought to be placed. Introduce that system of domestic discipline into your country, improve the minds of your women and quicken their souls with true moral and religious impulses; and bring them under the salutary restraints of moral discipline. Convince them that true emancipation means deliverance from

the fetters of corruption and untruth ; and that true liberty means the power to act freely according to the light of God in the soul, and to discharge our duties to ourselves, to others, and to our God without any hindrance. These are the great things which your women require at the present moment, and if you teach them moral and intellectual discipline,—if you make them understand the value of truth, and science, and religion,—you will establish that social equality and purity without which Indian reformation would be merely superficial refinement. If you wish to give India true civilization, infuse purity and instil right ideas of duty into the native female mind.

DISCUSSION.

The Lord Bishop of Calcutta said—Mr. President, Ladies, and Gentlemen,—I have great pleasure in proposing, as you have requested me, a vote of thanks to my friend Babu Keshub Chunder Sen, for the address which he has made to you on the interesting subject which he has chosen. I need scarcely say that the very wise choice of this subject was an additional reason for thankfulness to him. Everything that can bring before you the necessity of the education of the female portion of the community of India, from first to last, is of necessity clear to every one who has the true interests of the country at heart. I have listened with great interest to his words, and I hope and trust that what I can agree with him in it will be taken home by all parents and husbands here present. I cannot, as I have said, agree with him in every particular. I cannot imagine that the steps which he suggests are altogether such as will carry out his ends. A part, indeed, of these steps has already been taken by the Government. He appeals to the Government of India. Government does not object to the education of females, without any religious bias of any kind. The schools which the Government provide are open, and in them the teaching of religion is forbidden. Therefore the girls in that point have the same opportunity that boys have. Government also is most anxious to establish such normal schools as the lecturer suggests. The difficulty is to find the materials. He appeals again to the Government, to bring ladies out from England, who should be competent to train other school-mistresses in their work, to inspect the work of these teachers, to go further, to go into the zenana, and to see there how education is progressing. But there is to be one condition. They are not to teach religion; here is the difficulty no doubt. He mentioned several illustrious names in your history.

You will find that not one of these was an irreligious person. They were wrapt up in their religion. The history of India will show that these ladies were all of the most religious character, distinctly and earnestly religious, according to the knowledge they possessed. It is most remarkable in their history that you will find this most prominent feature in their lives, and it was from that that their education and governing power seemed to flow. Then, again, he desired that ladies, such as he had seen in England, should come out to India, to your homes out here. He saw these homes in England; he appreciated them; he justly said that what made these homes what they were was the present enlightenment of these ladies. But what made these homes be what they are, and these ladies be what they are; it is Christianity. This is what made these ladies to be what they are, and these homes to be what they are. Without this you will not get these ladies to be what they are. I would not enforce religion. God forbid. I would trust it to the free consciences of those who can speak and hear. That is true liberty and that is true equality; and, therefore, while I sympathise with him deeply in the object he proposes to accomplish, and while I admire the energy and ability with which he would effect the amelioration of the country, I pray God that full light may come upon him, and that this instrument may prove indeed His own for achieving these good objects. But I do not believe that, without this grace of God, he

will ever accomplish all he proposes. I am afraid that I am rather trespassing beyond measure in proposing a vote of thanks, but it is because I feel most deeply upon this subject, because I hope to see him a chosen instrument for God's ends, that I hope the full light of truth, and the full possession of all those graces which God has to give, that I desire to see a further advancement of this measure. He has spoken of the good of education; he has spoken of the blessings it will be to your homes which knowledge and the cultivation of the intellect will bestow. He has described them such as I hope you will have when you come out with your ladies to scientific visits with your children around you. If five or six hundred gentlemen, in Calcutta or its neighbourhood, will join together, and take their wives and children out to some of these places; if they will, if they choose, ask a few of us to join them, in such pleasing sorts of entertainment, they will make a better beginning, and much more so than I can see in the suggestions now laid before you. Now will eight or nine hundred native gentlemen in Calcutta, go out anywhere with their wives and children, to the Botanical Gardens, or to the Asiatic Society's Museum? Why will they not? We do it continually. It is only a little want of courage. I am afraid it is a little want of moral courage. Now do let me ask you to form such a party as you suggest. It will be of the greatest possible benefit. And then, just consider, if education of this character is desirable, about 50 years may be spent in some enlightenment, good real work, a knowledge of books, and other advantages, such as playing on the piano, dancing, and other accomplishments. But surely we ought not to limit our wives to this world. In all education we must have regard to the world to come. It is when we understand the meaning and objects of this life that it is merely a school in which we are all to be disciplined and trained for the world to come, that we can realize its grandeur, and devote ourselves to its work properly. Then you will see that there must be religious education. The lecturer desires the teachers to be devoted to their work. He desired that they should be devout people. I also wish that they should be devout, both teachers and pupils. But then there must be some definite object in view, some instruction from on High, some revelation from God. Then we shall know what we are doing, then I believe, with that object, that lady teachers will no longer be lacking either in England or in India. This is what is required. But this is looking far off. If this can be understood and thoroughly taken in hand, I believe they will have that enlightenment in their homes. It was that spiritual hope obtaining in homes which makes homes what they are in England. It is that which makes them to be places where husbands and parents resort with joy and gladness, sure that they shall find those who can enter into their inmost sympathies. This is what makes me so anxious to see this female education gain and increase throughout the length and breadth of the land. I trust it may increase till your homes are built up as they should be, and till that full light which comes from on High penetrates every household in India.

In conclusion, I again ask you to join me in proposing a vote of thanks to Babu Keshub Chunder Sen, for the able and valuable address with which he has favoured us to-day.

DR. NORMAN CHEVERS said—Mr. President, Ladies, and Gentlemen,—I have very great pleasure in seconding the motion now before you. I think that all who have heard this address of the eminent Indian reformer will feel, whatever their opinions may be, that it has been characterised, not so much for its beaming and singular eloquence as for its very remarkable practical character, and also, according to his opinions, for its very great liberality in the exposi-

tion of his opinions. I will not attempt to follow the line of argument adopted by the Lord Bishop, although I feel very sure that some of those present will agree with what he said, not because I do not feel with him, but because I think that the path which he has taken is one too sacred for me to follow. I will merely say a few words with regard to the example England has set in this question of advancing the education of women. Any one who has studied the history of English morality, and especially the social history of England, must be well aware that, in reality during the last century, excepting in the universities amongst the sons of the nobility and the sons of a few who had almost through their riches raised themselves to the position of the aristocracy, there was very little common education indeed amongst men. Look at the women; what was to be found amongst them at that time was a singular amount of superficial refinement and of piety, and a great many of the best qualities which adorn the sex, and a want of education which was as general as it was lamentable. Look at the history of literature. Recollect how very few female writers of any eminence there were during the last century. Look at the writings of to-day. I will not say that they are all such as one would wish to see in so advanced an age as the nineteenth century. Still there was one most distinguishing characteristic in the writings of women in the present day. Look at the writings of such writers as these—Mrs. Oliphant, Grey, Austen, the author of “*John Halifax, Gentlemen*” and other writers such as these. Look at the marvellous purity of the English style in this circle of authors. The English was exceedingly beautiful. Lord Macaulay himself did not write in a better style than any one of these ladies that I have mentioned. And although I cannot join with those who advocate the necessity of professions for women at the present day—the right of women to become statesmen and rulers in the land—although I cannot join with those who see fit to go forward in competition with women in every respect, there cannot certainly be a doubt that the great tendency which now exists in Europe and America to elevate the position of women, arises from the general levelling up in the social education of women. Therefore, I would say that we in England and in Europe generally, are only very little in advance of you in India. Those reforms which have been so zealously advanced by the social reformer who has addressed you, are now making progress in India just commensurate with the progress previously made in England, and I would not look so much to the result of the education of the present day. You are now in this present day, only educating your girls. You must recollect that you yourselves are only commencing. When I came to this country twenty-three years ago, there was scarcely any education whatever among girls or women, or if there was any, it was only experimental. And with regard to the proposal that the native gentlemen of Calcutta should take their wives to places of interest, such as the Botanical Gardens and the rooms of the Asiatic Society, I would scarcely expect that from the gentlemen of Calcutta at the present time, because I know that though people wish to see the proposal carried out, the ladies positively would not go. Our motto must be in this case to go slowly, to make gradual, sufficient, and steady progress. “Let the light of education enter somewhat gradually but surely—and slowly if you will—into the minds of the women of India.” And I do believe that should it be in our power to know, as I trust it may, fifty years hence, it is very probable that, at that time, when the women of Bengal shall be descendants of educated grandmothers, there can be scarcely any doubt whatever that they will occupy a position such as we wish them to have, having clear and open minds ready to receive knowledge, by no means inferior to that of their husbands, and that they will then occupy a position which will enable them to

compare, without any detriment, with the most enlightened women of European countries.

THE REV. KRISTO MOHUN BANERJEE said:—Mr. President, Ladies and Gentlemen,—I rise to say a few words in support of the resolution now before the meeting. The Lord Bishop of Calcutta has done justice to one point, and on that, like the gentleman who seconded the resolution, it is not my intention to dwell. But I wish to meet the subject on which my learned friend has given such a well-considered and interesting lecture from our Indian point of view. My friend, in his lecture, reminded us that the civilization of India is not to be as it were created, anew, but to be restored and revived. To a certain extent I cordially agree with all that he has said. Now, Mr. President, ladies, and gentlemen, if we were to survey the mental state of the women of Bengal at the present day, and if we were to compare that state with the intellectual state of the women of India in general two thousand years ago,—if we were to compare these two mental states, I am not at all certain that the women of our age need be much ashamed of their present condition, or that they will be found to be vastly inferior to their predecessors in the age of Kalidassa. In the fragmentary works of Kalidassa we find men and women speaking in the common vernacular language, and Brahmins and Rajahs speaking in the Sanskrit language. Now, gentlemen, I look upon that as a very forcible index of the mental state of society in that age. It meant that education and learning were not generally known even among the male population, that there were learned Brahmins, that there were learned Rajahs, but that the lower classes did not know anything of the learned languages, because they spoke in the vernacular only. Now, gentlemen, although there were a few names, honorable names, of women, we all know of instances of successful cultivation of learning and science; still I doubt very much, that in the days of Kalidassa there could be found a much larger number of females, of lettered native females, than in our own age. In our age, too, we have a good many, as my friend has shown, who have learnt to read and write, though they are immured in the zenana; and as evidence of that my learned friend here has produced such proofs as cannot be gainsaid,—you have only to look at the books, and at the pictures here exhibited. Now that being the case, in what respect is it that our society requires to be revised? I think in this respect—that in the days of Kalidassa, few as the learned women were, they were not fewer than the learned men; that, generally speaking, husbands and wives were pretty much in the same level in an intellectual point of view. Such is not the case now. We see there is a great inequality of level between husband and wife. We see the husband very industriously pursuing the study of literature and science to the utmost extent, vying with the children of England as within the last few years we saw one of our countrymen, not only vying, but standing third in the list of 300 Anglo-Saxon young men, who competed with him for the Civil Service. We have had our countrymen in England surprising European audiences by the exhibition of their learning, their eloquence, and their intellectual greatness. Gentlemen, where were their wives? On what level were their wives, uneducated ladies, in comparison with their husbands, educated gentlemen? There then is the peculiarity of our age—the peculiarity is this that there are very few educated ladies in comparison with our educated gentlemen (The Bishop:—You agree with the Viceroy: you are in favour of levelling up). See the vast difference between you and your wives. It is this, gentlemen, which I say it is your duty to rectify.

My friend made some very excellent suggestions about taking your ladies out to see something of the air of heaven, of the works of nature in the Botanical Gardens, and in the Asiatic Society's Museum. I will, gentlemen, presume to say something still higher and still further. I did not understand my friend when he cautioned you too much against outlandish innovations. I do not know whether travelling by railway is to be looked upon as an outlandish innovation, whether making use of the Electric Telegraph is to be considered as such. I do not know whether in his meaning that would be an outlandish civilization. But this I do mean that while you are so freely enjoying the railway, while you are so freely making use of the railway, to see different parts of the country, I ask, have not your ladies the same right to enjoy the same advantages? Did the God of heaven create the elements so as to produce that vast force which steam possesses, only for the comforts and convenience of men? Here, gentlemen, I ask you, I put it to your own consciences, if you think that women are entitled to enjoy their liberty as the daughters of God, as you are entitled to enjoy your liberty as the sons of God. I say, if you look on them as upon yourselves as the common children of God, I ask you to consider, and commune in your own minds, whether they are not as much entitled to enjoy those gifts of providence and nature which you are enjoying, whether they have not the same right to breathe the free air of the outside world, outside their houses, outside the zenana, as you have; and if so, I not only second the proposal of my friend the learned lecturer, that you should now and then, in sixes and sevens, bring your wives, stealthily, to the Botanical Gardens, as I at one time did and was also taken up. But I must also mention, that when I did so, and was by mistake taken up by a chowkedar those days have gone by. We now, fortunately, live in better times and in happier days, and I believe that none of you are likely to pass through that difficulty. Well I say, then—in supporting the proposal of the learned lecturer—that you ought not only to take your wives and daughters, stealthily, now and then to the Botanical Gardens and to the Asiatic Society's Museum, but I say that you ought to let them have to the utmost of your power, the same enjoyments to the gifts of God and of the gifts of nature, the same advantages which you also enjoy daily, from the discoveries of science, from railways, and also from steam vessels, though you have not yet, I believe, come to make much use of the latter. But this is what I would impress upon you, my friends—that the great difference between the intellectual state of women in our days, and the intellectual state of women in the days of Kalidassa, lies in this, that now they have very highly cultivated husbands and fathers, and yet they themselves occupy a very lowly position. I beseech you, my dear brethren, to consider to what extent you may be able to bridge over this difference, and be able to make use of railways and other outlandish innovations. I beseech you, my dear friends, to consider to what extent you may, under Providence, be able to overcome these outlandish innovations, not only on account of yourselves, but of your wives and your daughters. For, depend upon it, the national elevation of the people of India is absolutely dependent upon the moral, social, and intellectual progress of the women, as well as of that of the men, comprising together the computed 150,000,000 of souls in British India.

2.—On Physical Education. By Captain R. G. LOCH.

[Read on the 22nd April 1871.]

THE object of all education is to attract, utilize, and bring to perfection the powers and capabilities of men. When the education of the mind is the immediate object, the highest branch of the science is attempted. The attributes of a man's mind are so subtle and superior that the education of the mere physical energies of man sinks into insignificance. And it is this consciousness which gives rise to a great danger,—namely, the danger of the neglect of physical education *because* it is inferior. This is a snare of a peculiarly complex character, for neglect in this quarter, independently of its visible and immediate effects as evidenced in stunted growth, contracted conformation, and imperfect development, produces diseases and maladies which unfit man for the struggle of life, and react upon his higher organization to such an extent that he finally becomes unable to avail himself of those higher faculties for the advantage of which he had sacrificed due attention to his physical welfare. By the cultivation of the intellect carried on at the expense of the wants of the body the constitution suddenly gives way, and the result is that neither are able to recover themselves. Every one is familiar with numerous instances where change, air, and exercise have been prescribed as the only remedy for overworked and broken down business men and scientific enthusiasts. Sometimes the remedy is effectual; very often it is unavailing, not, however, because there is no virtue in the prescription, but because it has not been applied in season.

It is this intimate connection between mental and physical education which makes the latter so especially important. If man could ignore the necessities of the body, and devote himself entirely to his intellectual cravings, without shortening his life, or exposing himself to protracted ill health, it would be difficult to put forward such a strong pretension on behalf of physical education, but it is not possible, and we must therefore cherish the body that the mind may remain vigorous.

Taking the crude meaning of the term, physical education is merely the process of the full development of the bodily powers. But this is really only a partial interpretation, the lifeless body of the word in which the 'vis viva' is absent, for in the consideration of this subject the highest point to be gained, the

great endeavour which we try to keep in view, is the production of the highest physical development which is *consistent* with the fullest intellectual excellence.

The idea of attaining this is, perhaps, somewhat utopian, but still we must be ready to avow and proclaim this as our object. That the result is often so meagre is simply an evidence of human infirmity.

Now, taking it for granted that the training of the bodily forces has always this object, we are able to drop allusion to it and to consider the subject from its narrower point of view, that is, the best means of producing physical excellence, as considered *per se*. Now the perfection of physical excellence combines the preservation of what is called the constitution—that is, the tenacity of the vital energies—with the creation and maintenance of muscular force. This point is deserving of particular attention because it is one so often and so naturally overlooked,—I say, naturally, because muscular development is in no way a guarantee for the presence of a good constitution, and delicacy of constitution is very often found in combination with splendid muscular conformation; *but* it is hard for one not to believe the evidence of the eye,—to think that within a nobly symmetrical frame there lurks a frailty and delicacy of organization which if overlooked, or even underrated, will sow the seeds of a rapid decline.

It is therefore of primary importance to discover what the constitution is, and if it be found delicate or unstable, the promotion of bodily energy can be proceeded with only with the greatest caution. Constant observation is required for this purpose,—observation which should begin with childhood, and which should be specially on the alert when the age of puberty is being entered upon, for it is then that we pass through the critical periods of life. It is at those seasons that a system of change is in operation, and it often depends on the method of treatment then enforced, and the habits of life then encouraged, what the future shall be. It is then that the constitution is most sensible to impression, and parents are as often astonished by pale sickly children throwing off their ailments, and becoming healthy and strong, as by sturdy bright looking children languishing and sickening.

The physical education of man begins with his infancy, and is comprehended in the words diet, recreation, exercise.

Diet plays a leading part in all branches of physical education, and when it takes the form called ‘training,’ attention to it is as

strictly insisted on, as it is by a physician in illness and convalescence. Diet must always vary according to conditions of climate, and occupations of life. It is a question which can never be viewed absolutely. It must always be considered in relation with the tastes of the individual and the ordinary purposes for which each individual is intended. It is the fashion in certain parts of Central Africa to admire fat women. It has been found that this charming obesity can be most readily attained by unlimited draughts of milk. Milk is therefore in many instances the sole food of Ethiopian 'belles,' who are desirous of imitating the prevailing fashion. It must be supposed that considerable importance is attached to this form of beauty, and therefore we are ready to receive it as a justification of what appears to us a very horrid habit. The taste of Europeans, and of the English especially, for flesh food is viewed by eastern nations with the reverse of favor, while it is to the substantial food that we are apt to attribute the muscular frame of which Englishmen are so fond of boasting. Asiatic nations make meat but a small, if any, portion of their meals, and it is to this we are wont to assign, wrongly I think, their slighter *physique*, which I myself should be disposed to lay to the door of differences of race, climate, and conditions of life.

Recreation and exercise have so much in common that it becomes convenient to treat of them together. It is obvious that it should be the object of the parent or teacher to make exercise at one and the same time a pleasant and a healthful occupation. If exercise of a particular nature goes 'against the grain' of certain people, it is manifest it is not suitable for them. Care should, however, be taken to distinguish between the disinclination which comes of unsuitability, and that which is the result of laziness. Indeed, if laziness be detected, it is almost always safe to raise the quantity of exercise demanded; for it is found that, as a general rule, sluggish natures are capable of enduring and thriving on more trying work than impetuous or excitable men. There seems to be something in an excitable temperament which refuses to shake off the efforts of exertion, and although such natures are capable of undergoing great fatigue under excitement, a reaction is inevitable.

All exercise at its commencement should be gradual. The effort to teach a child to run before it can walk must end in failure; a day's hard work when the body is soft from want of exercise very often causes some serious injury, of which there would have been no danger had the muscles been gradually pre-

pared. Then again, it requires immense discernment and unflagging attention to distinguish between those who are fitted for daily exertion, and those who require intervals of rest, sometimes every other, sometimes every third or fourth day. In the severer courses of training many a promising debutant breaks down under the unceasing grind to which a careless 'coach' subjects him. It is impossible to lay down rules on this point, observation must take their place. As long as freshness of spirit and elasticity of temperament are unchecked, it can be safely asserted that no over-exertion has been exacted, but the moment despondency shows signs of appearing, the remedy must be found in rest, sometimes partial, sometimes complete.

Man is a hardy animal. He will undergo more training than other animals without ill effects. He can remain longer in the highest pitch of training, but it must always be remembered that with him, as with others, the time of what is technically called perfect condition is a very critical one. It is said that when a man reaches that point he has reached limits beyond which if he were to press one iota he would injure his constitution irreparably,—a man breaking down from overstrain in this manner generally breaks down completely. The splendid apparent health, and development of form which has been produced by his training very often covers ravages which have been going on upon the vital organs of his body from over-exertion. The heart in particular is very open to such attacks, but will perform its functions without showing any sign until long after the seeds of decay have been implanted. It is only when its presence manifests itself by sudden languor, unexpected faintness, palpitation, and such like, that the trainer becomes aware on what precarious tenure his pupil is holding on to life, and by that time the constitution is usually ruined, and the man, if he lives, is a mere shadow of himself, a valetudinarian, a field for the experiments of tentative medical science.

But with care this may be avoided. It is in childhood and youth that symptoms of indisposition and incompatibility with certain exercises most readily manifest themselves, and careful observation then will generally indicate to what extent it is safe to press the active pursuits of the child. It is of much importance too at this early stage not to allow any particular exercise or pursuit to possess a predominating influence. It is wiser to encourage a variety of ~~tastes~~ ^{talents}, the very acquirement of which will educate the faculties of comprehending and adapting themselves to novel experiences as they come before a man during his

life; whereas if a boy be habituated to one class of exercises, and one only, he will find himself very awkward and slow at other accomplishments, which, had his training been more liberal, he could have mastered with ease. On the other hand, if it be the object to procure a high standard of excellence in one, or a few peculiar pursuits, no time should be lost in restricting the pupil to these branches of education as much as possible. In manly exercises and accomplishments it is notable that men very seldom develope any very peculiar proficiency after attaining to manhood. The best riders have usually begun on a pony when they were little more than the height of the table, the best athletes, the fastest runners, are generally those who have trained themselves in those pursuits from a very early age.

The view to take of it seems to be this. If you would educate for a profession, let all which will be of advantage to that profession have precedence over other pursuits, but if nothing more than accomplishment be the proposed end, it seems wiser to enlarge their number, than to pay undivided attention to one at the expense of others. When the boy grows older he will naturally make the selection to which his innate likings tend, and he will easily gain sufficient proficiency at that, and at the same time will have acquired that general facility for adapting himself to novel conditions and circumstances which is necessarily so beneficial to every one.

So far attention has only been turned to the general education of physical power; let us now turn to those forms of it which educate for some special branch.

The pursuits of men are so numerous, so varying, and so opposed, that even the most versatile man can hope to acquire excellence in only a limited number. Sometimes two pursuits are so utterly opposed to each other in their first principles that the same man could not possibly shine in both. For instance, size, which is a qualification in one is an absolute obstacle to success in another, Weight interferes with a third. Fat debars a man from a fourth, and so on. Thus a man very soon finds out those pursuits which are most suitable to his habits and conformation.

As a general rule, strength, speed, and quickness of hand and eye will qualify a man for most things, and the developments of these form a large part of the course of training. Get rid of all fatty matter, harden all the soft flesh, increase all the muscles, accustom the lungs to the rapid breathing which is

required in all sustained or powerful efforts, and the result is a man in good condition. He will be able to undergo very great exertion without fatigue, and even when he becomes exhausted, a short rest will restore his energies, as long as no organic disease has been fostered during the long course of training which has done so much for his outward appearance.

The astonishing elasticity of a man in perfect condition is one of the most notable points connected with training. It is not uncommon to see a man after a severe race so utterly distressed that one begins to have serious apprehensions about him. His eyes are staring and bloodshot,—his face crimson, or deathly pale,—his breathing a convulsive sob,—his limbs powerless and rigid,—he cannot speak, and his greatest relief seems to be to lie restlessly at full length on the ground. When this supreme exhaustion passes away, he is able to think about relieving the extreme dryness of his mouth and throat. The slightest draught, even if it be only water, though in general a stronger liquid is not considered objectionable, works a magic effect, and in the course of a few minutes all the signs of supreme exertion have vanished, and the man is prepared to enter into a second contest nearly as vigorous as ever. On the other hand, had a man only half trained gone through the same exertion, and arrived at the goal in the same state of exhaustion, he would have been unable to rally from its effects in the same way, and would have laid himself open to the danger of some permanent injury. The course of training is a hard road to travel, but if a man would excel in any of the exercises which tax a man's powers to the full, the only way in which he can do so with safety to himself is by a gradual preparation, during which the utmost attention must be paid to the peculiarities of his constitution and habits. It is marvellous what an improvement is manifested where either inclination or necessity directs a man's energies into a certain channel. Darwin's theory of rudimentary organs, and the development of new faculties according to altered conditions of life, is strikingly exemplified in a restricted sense. From disuse, and the preference which is given by custom to the other hand, the left arm is comparatively an awkward inefficient member, on the downhill road towards becoming a rudimentary organ. We see nothing of the same sort in the left leg; it is called upon to exercise the same functions as its fellow, and in an equal degree, and the result is that there is no inferiority. On the other hand, habit perfects certain gifts in a surprising manner. The Red Indian, for example, being essen-

tially a wanderer, having to rely from his infancy on his pedestrian powers, whether for journeying in the pursuit of game, or in warfare, has acquired a length of stride which European pedestrians have failed to equal, and they are endowed with powers of endurance which I take to have become a national characteristic, solely as the result of an enforced mode of life. India is not wanting in an instance of the same kind. The astonishing feats performed by 'palkee' bearers extort from a foreigner unfeigned surprise. These men, by no means powerful or athletic in build, endowed with no special qualifications visible to the eye, can travel over forty and fifty miles in a day, taking their turn in carrying a loaded palkee, and at such a speed as would tax the powers of many a professed pedestrian. The Indian bheestie is another case in point. No amateur, be he European or Asiatic, who has committed himself to carrying a full waterskin, even for a short distance, but will admit that its transport is a work of no common difficulty.

There is a curious feature in training which is seldom sufficiently appreciated except by the 'cognoscenti,—and that is the distinction which much be drawn between momentary or spasmodic, and sustained effort. The preparation for the one is often prejudicial to success in the other. For instance, in running, if a man were carefully trained for a mile race, he would probably deteriorate as a '*sprint*' runner, that is, a runner of short races, where the whole distance is travelled at full speed. In such cases the endurance gained by continued exercise over a long course is acquired at the sacrifice of a certain portion of the extreme quickness required for the short distance.

Leaving this section of the subject, I would revert for a few moments to a consideration of those general branches of physical education which will be of more interest to the natives of this country. It is often remarked that the youth of eastern countries, and especially of India, do not develope that taste for manly pursuits which is such a striking feature among all classes in Europe, and it is argued that the direct result is an effeminacy and softness in the manhood of the nation. Many Bengalees, we are sorry to see, plead guilty to the charge. An admission of the kind has before now appeared in a public journal. "We Bengalees, they say, are a peaceful, if you like, an effeminate race. Manliness, physical excellence, is not a thing we prize. God gave us brains instead; we are content to use them, and leave the development of thew and sinew to others." It may be that the Bengalees are what they would wish to represent themselves

to be. But if so, they should cease allusion to their Aryan forefathers,—that line of conquerors which pushed its way westward and southwards, driving before them the outer barbarian, and introducing, as ages advanced, the civilisation of a nobler and more intellectual race. Through them we possess, if ethnologists speak truly, a remote kinship with you; but we, while we boast ourselves to have achieved a higher civilization than India has ever acquired, cherish our national intrepidity, foster manliness and the spirit of adventure in our youth, while we deny that we have been compelled to yield the patent of intellectual superiority to any kindred race. I do not say this to taunt any Bengalee, but I say it to show that there need be no decline in intellectuality, because the national characteristics for physical vigour and courage remain undeteriorated. You may treat the traditional kinship, the legends of Aryan conquest, the general history of the long vanished past as a myth, as old women's stories, but whatever may be the truth of our common origin, *we* can still point to ourselves as a nation which has achieved a combination of physical and intellectual excellence. We are therefore in a fit position to appeal to you to encourage manly pursuits and healthful exercises among your children. It is true we come here as conquerors, and our tenure of this vast empire is still secured by the sword. But we claim, that is, those who have the interest of the empire at heart, claim to have established large sympathies among you. The cause of the education of the masses has become a national question, exciting discussion, raising fears and hopes among you. Before we came, the people as a mass were inert, neither hoping for nor expecting education. You will all allow that in this great matter we have not stood still, though at times policy may have faltered in its advance; why then should you hesitate in a smaller matter like physical education, which will give health and strength to your children, and make them fitter for the battle of life. It is not surely that it is not in you. There are institutions in the country, under English auspices, where the recreation and exercises of the boys have their full share of attention, and in them the boys take to their out-of-doors amusements as gladly and fearlessly as English boys would. The boys have no fear, and if when they were passing from boyhood to manhood, the spirit that is in them were still fostered, and the effeminacy of the zenana, and the premature discharge of the functions of manhood were discountenanced, there is little doubt that the young men of good birth would

lose that listless apathy, and distaste for physical exertion, which is so painfully apparent to English eyes.

Will it be a futile hope to expect that the exercises common in some of the institutions above referred to, will become current among native schools under native management. If the parents and the teachers will encourage such sports, rest assured that the boys will not make a difficulty. A boy, be he Bengalee, Rajpoot, or Sikh, enjoys a game, and few will venture to assert that it is not for his benefit. There are few games more innocent or excellent in their general character than English games, and they are not likely to interfere with any preconceived objections on the score of caste; but if there should be any objections to the games of another country, there are,—there must be, many national sports which only require encouragement to receive general acceptance. Encourage the best of these; let the boy live as a boy while he is a boy. We imagine the nursery rhyme—

‘All work and no play makes Jack a dull boy,’

overrides any distinction of color and creed. Discountenance that fatal mistake—fatal, I believe, both when viewed from a physical and moral stand-point, of allowing a boy to become a father long before he has forgotten that he is a child, and you may rest assured you will be on the high way to remove any stigma which detractors would attach to the inhabitants of India on the ground of extreme effeminacy.

HEALTH.

1.—*The Drainage of Calcutta: By W. CLARK.*

[Read on the 2nd February 1871.]

PHYSIOLOGISTS inform us, that, by the strict natural ordinance, a man should know no more of his death, than of his birth,—that is to say, if he escape death by violence, he should go through a certain cycle of vitality, should sink into a second childishness or mere oblivion, and should ultimately die, knowing nothing of the fact of death. However true this may be as a mere theory, it is well known that it is seldom realized, as we live surrounded by circumstances which lead to disease.

It will, however, be generally admitted, that to attain the full period of human life, with that amount of happiness of which it is susceptible, there are several absolute requisites which a man must secure for himself; of these, pure air, and food are of the most vital importance.

The process of life in the consumption and assimilation of food, pollutes and thereby impairs the life-sustaining properties of the surrounding air. To counteract the evils resulting from this ever-present source of disease, the efforts of our reasoning faculties are necessary; and the deficiency or completeness of the means which have at various times been adopted, form the sources of incidents the most striking in the social history of a nation or community.

Probably in few countries has this been more strikingly exemplified than in the one we call "*home*," where accident, philanthropy, and scientific research have all contributed to enlighten us on the means to be adopted for the preservation of the public health; and also for mitigating, if not preventing, those terrible scourges which have, from time to time, spread death and dismay through the land.

It was accident which annihilated plague in London, and proved it to belong to the class of preventable diseases. Thus, during the seventy-three years from 1592 to 1665, London was visited by five great plagues, all of which are known to have been due to the impure condition of the town.

The accident which led to the great fire, led also to the rebuilding of the city and the disappearance of plague.

The mortality from cholera in our own times has been comparatively slight. Had the same *rate* of mortality prevailed as in the plagues of the 17th century, it has been computed that the deaths in the metropolitan district (which in the first cholera epidemic exceeded 5,000, the second 15,000) would have exceeded half a million.

Thus the great fire of London, which as a remedy the economists of the day would have been slow to adopt, proved to themselves and their descendants in its effects, the source of inestimable blessing.

It was philanthropy which induced the immortal John Howard to undertake the amelioration of the most depraved of the population. By unwearied exertion he made himself heard in the palace, and felt in the dungeon, which by him was converted from a legal sepulchre, the constant abode of fever, into a simple means of healthful confinement; and our prisons have since become models of sanitary perfection. Thus, in the year 1414, the gaolers in Newgate and Ludgate, and prisoners to the number of sixty-four, died of the fever, then called the "disease of the house." In 1577, the assize was held at Oxford, called in the records the "Black Assize," on which occasion all who were present in Court died—the judge, the sheriff, and 800 more—from a disease brought into Court by the prisoners. Many other instances may be given of the horrible state of the prisons of that day, where fever was bred, and nursed in the filth and foulness of the places in which prisoners were confined.

It is this disease, expelled from our prisons not only in England, but it is to be hoped in this country also, which still lingers under other names in the filthy and depressed districts of our large towns; raging sometimes with more, and sometimes with less, violence, but ready to assume the virulence of an ancient plague, where encouraged by want or misery, and fed by filth, or anything which tends to impair the purity of the air we breathe.

The careful and prolonged inquiries which, for the past quarter of a century, have been made by the direction of Government into the sanitary condition of the population, have discovered an amount of preventable disease and suffering, so surprisingly great, that legislative interference was felt to be imperatively necessary, to check the progress of the deadly evils proceeding from the foul, because undrained, habitations of the people; and

to substitute, for preventable disease and misery, the health and happier condition which could be insured by the application of a few scientific principles.

The principal enactment for this purpose in England is that called the "Public Health Act of 1848," which has formed the basis for all sanitary legislation since, both in England and in the Presidency towns of this country.

The Health Officer's return for the year 1869 makes the mortality in Calcutta 33·9 per 1,000; and for the previous year, 36·4 per 1,000. These rates are very high, exceeding by nearly 50 per cent. that of the larger towns in England; and no doubt, largely due to the class of preventable diseases. I can give no statistics as to the relative proportion of preventable sickness to death. I am not aware that they have ever been obtained in a reliable form; but the enquiries in England appear to prove that the inevitable mortality, or that due to decaying nature and accident, did not exceed 23 per 1,000 per annum; and this limit was fixed, as that at which the Act could take effect; or, in other words, where the average mortality exceeded, during seven years, 23 per 1,000, there the Act could take effect; and it was lamentable to see how very few towns there were at the time where the Act could not take effect; where the population could rest with the comfortable conviction that all necessary precautions for the preservation of health had been taken, and that they were exposed to none of the unnecessary ills of mortality.

The Reports of the Medical Inspectors have proved the fact, that for every death in excess of the 23 per 1,000, there were in England twenty-eight cases of preventable sickness; and it has been estimated that the cost of this preventable disease equalled the whole public revenue of the country.

This was England, the home of most who hear me, where science and civilization have reached their highest stages of development, in the history of the world.

Grown wiser by the result of these inquiries, Englishmen have, during the past few years, been busily occupying themselves in setting their houses in order, and, under Providence, much good has been already done, though much still remains to do; and it is probable that, during the present session of the British Parliament, a much more comprehensive measure will be introduced, for regulating the drainage, and general sanitary condition of the United Kingdom; and will also give those larger powers to the Executive Government, which are necessary to enforce it; but which, in the comparative infancy of sanitary science in

1848, and even up to the present time, have been jealously withheld.

But it may be asked, how does the sanitary condition of England, in any way illustrate our condition, as dwellers in British India? Simply this, that the active agents, which are there abundant for the spread of disease, *viz.*, *filth* and *moisture*, are here even more abundant; and the temperate climate under which the decomposition of organic substances there takes place, engendering poisonous gases, is here replaced by tropical heat, and the far more rapid decomposition which it causes; in short, it appears that here, we have the sources of disease, if not in greater quantity, yet acting with greater intensity; rendering the immediate, rapid, and complete removal of all effete matter from the habitations of the population imperatively necessary. If this be regularly accomplished, so as to anticipate decomposition, then I conceive that the most important measure for preventing disease has been secured, and the atmosphere will be preserved, as nearly as possible, in its original purity.

I may here refer to the even now recent period when, in this city, the Fever Hospital Committee were engaged in their labours; one of the witnesses, Mudoosoodun Goopto, whose evidence is given at page 9 of the Report, said: "The most unhealthy season of the year was from August to November; that during these months, the people suffered from intermittent, remittent, and bilious fevers, dysentery and cholera." The number of people who suffered from these diseases at that season amounted to about 500 in each thannah, including all classes of Natives and East Indians. It being remarked to him that this would amount to upwards of 18,000 people, he answered: "Yes, that though in some thannahs there were less, in others there would be more; but the average would amount to the number he stated, and the greater part of them were severely affected."

It being directly put to him whether he did not overstate the number, he said, "No, that although the number appeared large, the population of the native part of the town was great; that even in poor families there were twenty-five inmates in each house, and that he meant the total number in those four months." He said the fevers usually lasted from sixteen to twenty days, during which time the persons afflicted are confined to bed; that the greater part recover, and are able again to work, but that some continue sick for life. I am quite unable to say how far this was correct. It seems, however, in the opinion of this witness, that

about one-fourth part of the population, within a period of four months, suffered from the diseases he mentioned. This was in the year 1840. Undoubtedly, the larger amount of sickness during these four months of the year, is due to the larger amount of moisture present, as an active agent, in the conveyance of malaria generated by filth, and the absence of all drainage, properly so called.

The result of the extraordinary labors of the Fever Hospital Committee, which extended over several years, was the erection of the building now known as the Medical College Hospital. It was intended, I believe, to confine the ravages of these preventable diseases within such bounds, as would enable the medical men to grapple with them successfully.

The Committee had also before them the evidence of engineers, and many excellent suggestions were made, but for a period of about fifteen years, literally, so far as I am aware, nothing was done; and I venture to say, even now, that very few of those who hear me, have the slightest idea of the amount of filth which is left on the surface, and in the ditches, to fester and rot, and to taint the atmosphere of this City of Palaces, and for the complete removal of which an efficient system of drainage is indispensable.

It was in 1856 that the scheme which I had the honor to present for the consideration of the Commissioners of that day, received encouragement from the Government; but it was not till April 1859 that the order to proceed with the works was given; since then it has drawn its weary length along, and even now, though I believe its success is admitted by all who inspect for themselves its operation, still wants the order for its completion.

I am perfectly aware, that the subject is one on which popular prejudice has been strong. I am conscious that from circumstances far beyond my control, there has been good cause for this; but I believe also, that this prejudice has proceeded entirely from a want of knowledge of the subject, not only on the part of the general community, but, also, with a few exceptions, of the large number of gentlemen who have the control of municipal affairs in their hands.

The drainage of Calcutta in all its details is a difficult and disagreeable subject to grapple with, certainly not inviting to the general public, and above all it is costly; it is felt in the municipal taxes to a considerable extent, and is credited, I

believe, with a much larger share of pressure on the tax-payers, than legitimately belongs to it.

In order to explain, as far as I can, the general bearings of this important subject, I accepted the invitation of your worthy President to read this paper; and I have the more readily embraced this opportunity of speaking to the public of Calcutta, whose servant I am, and whose verdict on my short-comings I have had to bear, because up to this time, I have not had one single opportunity afforded me of expressing my views and opinions, in the discussions of my municipal masters, though the works designed by me, which they have undertaken, have already involved an expenditure of about one million sterling.

I am fully alive to the weight of the responsibility which attaches alike to them, and to myself as their engineer; but I mention this singular fact publicly, as one I believe without parallel, in the management of large engineering works of this character, and for the consideration of the third, and most important party to the arrangement, *viz.*, those who pay the taxes.

But my immediate object is to show, so far as I can, how the money, about 47 lakhs* of rupees, has been spent on the drainage works; to explain the principles of the system, in order that its operation and beneficial effects may be better understood; and help, as I hope to do their extension, to that part of the city where they are, and always have been most urgently required,—I mean the northern and exclusively native portion.

Before proceeding further, I may be permitted to say a word on the cost of the drainage works, which up to the present time has been about 47 lakhs, including 2½ lakhs for the purchase of land.

They were commenced in 1859, when the house tax was 7½ per cent. It is now 9 per cent.

The lighting, police, and water rates are for specific purposes, and contribute nothing to the drainage. The carriage and horse tax existed before the works were commenced; this, with the licence tax, now yielding about 2½ lakhs† per annum, and the house tax, constitute the current revenues which have enabled the municipality to carry out, so far as they have extended, the new system of drainage works. From the same source the conservancy department, the repair of roads, surface improvements of every kind, and the pauper hospital, are also maintained.

* £470,000.

† £25,000.

The road repairs have cost about $3\frac{1}{2}$ per cent. of the total assessment to the house tax; the conservancy department about 2 per cent.; street watering, imperfect as it was in 1869, upwards of 1 per cent.

It will probably surprise many, when to this list I add, that up to the present time, the actual pressure of the drainage on the pockets of the tax-payers has not exceeded $2\frac{1}{4}$ per cent. of the annual assessment to the house tax; which is less than the cost of the road repairs, and scarcely three times the expense of the imperfect street watering in 1869.

Moreover, the expenditure is made to include most of the surface improvements which have been effected. This $2\frac{1}{4}$ per cent. then, is the real magnitude of the extra pressure of taxation, which the owners of property in Calcutta have labored under, during the past few years, due to the drainage; and I mention this fact for general information, as these works are, I believe, generally held responsible for a much larger amount.

The term *preventable disease* which I have used frequently, at once suggests the question, how, by what means preventable? The answer to this introduces the subject of this paper—drainage—and more especially the drainage of towns.

All experience has proved that the active agents for producing the evil effects I have spoken of, are *localized filth* and *moisture*,—filth retained to pass through all the stages of decay, and moisture by its evaporation to convey dissolved within itself, the organic poisons, or ultimate germs of disease.

To remove all effete and noxious matters capable of being conveyed in running waters, rapidly, completely, and continuously, as they are produced, from within the boundaries of a town, to a sufficient distance outside of it, is the first object of drainage; and the plan to be adopted depends entirely on the peculiarities of the site; thus a rocky hill station, like most of our Indian sanitarium, or a town built on a gravelly soil, elevated more or less above the surrounding country, require totally different treatment, from that of Calcutta, Bombay, or Madras.

The natural facilities for the drainage of towns built on elevated, rocky, or porous sites, have not unfrequently led to great evils. Thus Ramsgate, a large town on the east coast of England, built on the chalk cliff, the resort of numerous health-seeking visitors from London, only a few years since, had no drainage properly so called; the plan generally adopted was to sink a dry well into the chalk, to no great depth, within which all the fluid filth of the house disappeared in a most wonderful way,

and for a long time; the chalk contains numerous cracks and fissures, through which the fluids could travel long distances; they did so, into the wells from which the water was pumped for domestic use, and from a lower level. The effect of this pollution was to render a favourite place of resort, with all its natural advantages as a sanitarium, an unhealthy place, by saturating the site with filth, and polluting its water supply: many and severe were the fights that had to be fought there, as elsewhere, to obtain a better and more salubrious state of things. Though opposed to common sense, and to such obvious and simple principles, that any one might understand them, yet the absence of any decided outburst of sickness to frighten the resident population, became to them eventually, what they considered safe experience, and they resisted the change to a better state of things, which involved expenditure and extra taxation.

I can mention another instance more immediately within my own practice, while in England in 1868. In the month of January an outburst of typhoid fever occurred at a pretty village called Terling, in Essex. After a long period of drought a very heavy rain fell, and the wells, while many of them had been dry, were suddenly filled. The village may be generally described as built on the side of a valley in the London clay, with a small stream, called the river Ter, flowing along its bottom; the hills on both sides are capped with gravel; a porous soil resting on a retentive one, most favorable for the accumulation of water; the junction of the two is indicated by a line of springs on the sloping sides of the valley; near this line as a matter of economy the wells were sunk. Not far distant, but for the most part in the gravel, the place for filth was dug, from which the rain water and other fluids could easily escape by soakage. On the occurrence of the heavy rain I have alluded to, undoubtedly the water which collected in the wells had, to some extent at least, passed through the filth-sodden surrounding soil. A fortnight afterwards the first cases of fever occurred; about one-third of the population suffered from severe attacks of the terrible disease; out of the population upwards of sixty died, and there were but few families attacked, that did not lose one or more of its members within three months.

The visitation will be long remembered in that part of England: it was clearly a preventable disease, and due to the pollution of the water of the wells.

The Government were compelled to interfere; the Poor Law Board sent down their medical officer, to enforce all the mea-

tures that were immediately necessary, and the engineering advisers of the Government did me the honor to nominate me to carry out the works of prevention. A water supply was collected from distant springs, and raised by power obtained from the river Ter, by a water wheel, and forced through pipes for distribution. A small drainage work, of stone-ware pipes exclusively, was also carried out; and both, on the occasion of my last visit, were in successful operation; but the villagers, though they use and approve the new water supply, still declare that the sickness from which they suffered was not due to the old one.

I need not, I think, multiply instances, to prove that Simla, or Ootacamund, and Calcutta should not be drained on precisely similar principles; there are scarcely two cases which are precisely the same. Thus Calcutta, which stands on the bank of a tidal river, with a considerable portion of its surface scarcely above the level of the highest spring tides; and a subsoil consisting for the most part of fine silty sand, saturated with water, requires a scheme especially suited to its physical position; in fact, the end to be obtained in the drainage of Calcutta, is very like the natural state of things in a favored locality. First, the subsoil must be drained, to render the foundation of houses dry; next, the excavations must be made so deep in places as to give the necessary fall to the sewers, which fall exists naturally on the undulating surface of the favored locality; and lastly, the storm water which will run and escape naturally by gravitation from the undulating and elevated surface, must be received into channels of some sort, and conducted to an outfall, either natural or artificial: all this involves a large expenditure of money. Moreover, it will be at once seen, that the expense of such works, if reckoned per head of the population, must increase with the extent of the area to be drained, because the works must inevitably extend in the larger and therefore more costly direction, to afford the required capacity for discharge.

I shall now proceed to describe, as well as I can, the general arrangement, and some of the details of the scheme for draining Calcutta.

You are all familiar with the general features of the city. It is bounded on the West by a tidal river, the Hooghly; on its North and East by the Circular Canal; and on the South by Tolly's Nullah; it is only on a portion of its Eastern side that the open country is not cut off by some navigable and tidal stream.

The surface of Calcutta has an inclination of nearly three feet per mile from the river towards the East.

The highest water in the Canal, is about four to five feet lower than that in the river; thus the best natural outfall for storm water, because subject to the least tidal obstruction, is towards the East. This is an important peculiarity in the site of Calcutta, as it allows of a natural, or gravitating outfall for heavy storms, though the nearly flat, and depressed surface, necessitates pumping, or an artificial outfall for the sewage at all other times, and during the dry season.

The most advantageous arrangement, therefore, was to follow the natural though slight inclination of the surface, and to lay out a system with its general inclination towards the East as the surface falls; and this has been done.

The plan shows five large sewers extending from the river through the town to the East, and all uniting in the Circular Road at the end of Durrumtollah Street.

These are the *first class* sewers; their inclination is from two to three feet per mile, and about that of the surface under which they are laid. This small inclination has a double object; it permits the escape of storm water into the river whenever the tide will permit, and it enables these sewers to be more or less flushed, if necessary, twice nearly every day in the year, by admitting the water from the river.

This is occasionally necessary, because the small fall given to them barely suffices for the removal of the heavy sandy solid matter, which is washed into them from the road surface.

Into these large sewers, the *second class* sewers are discharged; the general arrangement of these latter, is to divide the surface of the city into square areas, by placing them under the leading thoroughfares.

They have a minimum fall of six feet per mile, sufficient to insure their self-cleansing action, when receiving the storm water, and the drainage in the dry season from private dwellings, when furnished with a sufficient water supply.

Into these *second class* sewers the smaller *third class* or pipe sewers discharge; they are laid into all the narrow and tortuous lanes and streets of the city, and their inclination is from 1 in 400 to 1 in 100, or at the rate of from 13 to 50 feet per mile.

The total length of the sewers when entirely completed, and as executed to the present time, will be as follows:—

	Total length at present.		When completed.	
<i>First class</i>	...	5 miles	...	10 $\frac{3}{4}$ miles.
<i>Second class</i>	...	11 $\frac{3}{4}$ "	...	23 "
<i>Third class</i>	...	10 "	...	79 "

It will thus be seen that one-half of the more expensive class of works is already completed, while the outfall works, with the exception of one pumping engine, still required, are finished.

It has been urged that it will be impossible to carry these smaller pipe sewers into the northern part of the city, where the lanes are so narrow and tortuous. To this I can only offer my judgment and experience: I am of opinion that they can be. I admit the difficulty, and it requires the greatest care not only in the execution of the work, but in arranging it.

I find that every street has its peculiarity, as to width, and the character of the buildings on its sides; all these have to be carefully noted and considered, when laying out the line, and inclinations. I have now so examined a large area of the closest built part of the city, and I have never yet found a portion in which, if the danger to buildings was great, that I could not by some other arrangement avoid it, and still accomplish the end I had in view.

Moreover, I can now point to an area in the southern division of the town actually drained, and the sewers in constant and successful operation. I allude to the area between Free School and Wellesley Streets; it is almost exclusively inhabited by a native population, and the lanes are narrow and tortuous. By a fortunate combination of circumstances, the order to drain this portion was obtained in April 1869; the middle of the hot season, to commence a work of this nature, is most undesirable, but it was successfully completed, so far as the public portion of the works are concerned, within the following cold season; and now presents a fair specimen, not only of benefit to be derived from the drainage, but also of the possibility of effecting it. I can state with very considerable satisfaction to myself, that up to the present time, out of the nearly forty lakhs expended on works executed by my own establishment, not 500 rupees has been required to pay for damage to property; and I believe, that though we cannot expect to escape entirely expenses of this character, in the further prosecution of the works, should they extend to the northern portion of the town, yet I feel very confident, that with the experience now obtained, no serious difficulties of this nature will arise.

The office of the sewers whose general arrangement I have described is threefold—

- 1st.—To remove the subsoil water.
- 2nd.—The drainage of houses.
- 3rd.—The rain water.

The first of these is by no means the least important. If a hole be dug seven or eight feet deep, in almost any part of Calcutta, remote from one of the sewers, and it be carefully observed during the varying seasons of the year, it will be found that the surface of the water, which will immediately collect in it, will vary from a few inches below the surface of the ground in the rainy season, to a few feet, at most five or six, in the month of May. Such trial holes will show only a trifling difference in different localities; only a few days ago, in Canning Street, where a new first class sewer is being laid, and at present incomplete to its outlet, I saw the sewer literally drowned, covered over with water of the subsoil, which stood at about two feet from the surface. When the outlet to this sewer is completed, this subsoil water will disappear to the level of the invert of the sewer; that is, it will be reduced to a level about ten feet lower, as a hole dug in its vicinity, would show; and other such trial holes would show a lower level of the subsoil water surface, varying with the distance from the sewer.

It is this subsoil water which causes damp houses; which by its evaporation produces a damp atmosphere, and it is in consequence of its usually greater depth from the surface during the hot weather, that the superior healthiness of that season is, I believe, attributable; hence the deeper the sewer the greater its efficiency for this purpose.

Secondly.—The sewers are intended to remove the house drainage, and this includes all the filthy water from the cook-room and stables, all fæcal matters, bath-room water, &c., &c., and is in quantity usually estimated by the water supply. For this purpose, and for the removal of rain water, small stone-ware tubes are laid from the houses to the sewers, and never with an inclination less than 1 in 120: this fall is found to be sufficient, but more is desirable, and can be obtained in almost every case.

The third office of the Calcutta sewers is to remove the rain water falling on the surface, and their capacity for discharge is calculated to be equal to $\frac{1}{4}$ inch of rain per hour. This is an enormous quantity, and would, if collected, be represented by a running stream 40 feet wide, 8 deep, and flowing at a velocity of 4 feet per second.

Among the criticisms which have been passed on the system, is the enormous size and cost of the sewers to convey so large a quantity; it must, however, be provided for in some way or other; either new channels must be formed, or the abominable ditches, and side drains as they have existed for many years, must be allowed to

remain,—this I think few persons would advocate, as they would undoubtedly be, as they are now, stagnant receptacles for filth, a source of nuisance and disease; in fact, any scheme which failed to render them unnecessary, would, I think, be liable to the charge of a want of a completeness, and therefore of success. As, however, some provision must be made for conveying away the rain water, the question resolves itself, into the reconstruction of these ditches, and surface drains, for this especial purpose, or the combination of the entire drainage waters, that of storms with the house drainage and the subsoil water.

The result of a careful inquiry as to the cost of the separate and combined plans induced me in 1855 to adopt the latter course; and I have seen no reason since to alter my opinion. As, however, there are many advocates for surface drains, I will here pause to inquire what those surface drains would be like. Granting that they would fall into the river at one end, and the canal at the other, it would be inevitable that the greater number of them would be nearly two miles long. Now to carry away the storm water and the road debris, and keep themselves clean, they should have a fall of not less than six feet per mile. It is very evident then, that when two miles long, they would be about ten to twelve feet deep at the lower end; and if only one mile long, five or six feet deep: they would, in fact, be dangerous chasms occupying a considerable portion of the road surface; and if covered, they would form a second system of sewers for storm water.

Suppose their fall to be reduced to three feet per mile, then must their capacity be largely increased, and occupy most inconveniently a large portion of the road surface.

Again, it will be seen that upwards of two-thirds of the entire length of the Calcutta sewers will, when completed, not average a larger size than a 12-inch stone-ware pipe; few people will, I think, be found to quarrel with this as being too large.

The whole objection then, as to the size of the sewers, is comprised within one-third of their total length; but this must be still further reduced, because with the disappearance of the first class sewers from the scheme, a total alteration in the arrangement of levels would be necessary, reducing the fall of the whole, or involving greater depths at the pumps, and increased cost of pumping: this would be highly objectionable. To preserve the present level and falls, the arrangement must be reserved also, and this would involve, under any circumstances, the construction of large brick sewers in the position of the

first class, having the same fall as these have, and upwards of one-third of the total length of the present brick sewer arrangement. The question thus becomes still further narrowed to the point whether twenty-three miles of deep brick sewers shall be constructed, out of 113 miles, or about double that length as a separate rain water system only, nearer the surface? I think any one who can follow me in what I have said, will see that the plan of greatest economy, and I am quite certain of efficiency also, has been adopted.

I cannot omit to notice still further, that surface drains have many advocates, because they can be cleaned so easily. To require regular cleaning, presumes that they must be as regularly filthy, and this is proved by experience abundantly in Calcutta. Wherever a surface drain exists in the neighbourhood of the residences of the poor, it is made use of to contain filth, and though the filth may be washed away regularly every morning, yet for twenty-three hours out of twenty-four, the surface drain is simply an evaporating basin of noxious matter. In the area between Free School and Wellesley Streets to which I have alluded, and to which I invite your especial attention, no surface drains have been put in by me. The expense, and the nuisance arising from them, have been both avoided.

I may now mention some of the details connected with the sewers in the town. In order to inspect their operation, to detect and remove obstructions, should they occur, **SIDE ENTRANCES** to the brick sewers are provided, about every 1,000 feet, and near to junctions. Besides this mode of inspection, all the sewers, whether of brick-work or stone-ware pipes, can be opened from the surface at **MAN-HOLES** situated not more than 200 feet apart, and covered with a cast-iron cover; these man-holes admit of cleansing operations, should such be necessary, without breaking up the road. Thus every part of the system is capable of being examined and cleaned.

The sewers are also provided with ventilating grids; these are fixed in the centre of the roads; their office is to allow the escape of the air from the sewer, on the occasion of any sudden rush of water into it, which would of course displace a quantity of air equal to itself in bulk, and so prevent the passage of air into the house drains. As a further precaution against this latter contingency, some few iron pipes have been fixed in places considered unobjectionable, by which an interchange of the sewer and the external air can gradually take place, and the diffusion of the former be effected. When the whole system of sewers is fairly in

operation, and made to convey away fresh filth, I am certain that the general adoption of this plan would be productive of no nuisance whatever, and the most abundant ventilation possible would be obtained as the result. But while they are as at present, temporarily I hope, made to convey filth in a state of decomposition, I do not think this addition to the ventilation is desirable, and it has not been extended.

GULLIES.—These are Pits situated for the most part just outside the kerb stones of the foot-path. They are from six to eight feet deep, for the purpose of receiving the storm water, as it flows from the street surfaces, through the iron grids which cover them; an overflow pipe is connected with the sewer from near the top of the gully, and the heavy particles of road grit are thus arrested. This deposit is excavated from time to time; notwithstanding this, however, some hundreds of tons of road grit finds its way to the pumps on the occurrence of every shower.

HOUSE DRAINS.—Every inlet to these is guarded by a grating, and a pit or trap acting on the syphon principle, so as to admit filthy fluid to pass inwards, but prevent the escape of the air outwards.

Many persons look upon these arrangements with suspicion, as a means of conducting impure air into the houses from the sewers. To prevent this, however, the house drains are furnished with an especial trap, near the inlet to the sewer, which effectually prevents it; there are also other ways of preventing sewer-air from entering the house. The diagram shows one mode of admitting the bath-room water of an upper floor into the sewer without risk of this result: soil pipes should always be carried up to the highest elevation, and left open for ventilation.

FOOT-PATHS.—There are no doubt many persons here who can remember Calcutta as far back as 1856; there were then no foot-paths, but an open ditch disfigured even the Chowringhee Road for nearly its entire length.

The foot-path was suggested by me to protect the gas pillars first fixed. About that time many were the discussions, and great was the opposition to the Chowringhee Road foot-path, which was the first. Prejudice was strong, but the Commissioners of the day were firm, and the gas pillars were set well out into the road, protected by the path, and doubtless diffuse a better light than they could do from a short bracket fixed on to a dirty wall. Prejudice has been so strong indeed on this subject, that even now people may be heard to declare that the natives never use these foot-paths;

this is simply contrary to the fact; wherever the foot-path is so good, as to be more comfortable to walk on than the road, there it is used; but when the road is the best, then the foot-path is deserted—a very reasonable discrimination on the part of the native pedestrians.

The foot-paths have, however, other objects. Thus they form an elevated and therefore dry surface when the road may possibly be wet by heavy watering, or flooded with rain; it forms a gutter for collecting the surface water, and its conveyance to the sewer in the centre of the road by a shorter channel: it is also economical, there is less surface of road to repair with expensive metal, less surface to engender dust and keep watered, and lastly, it actually costs a trifle less than the surface drains, which have, as I think by mistake, been put down in such streets as Harington and Middleton Streets, Middleton Row, &c., &c.

The question of foot-paths is really a most important one, by no means difficult to understand, yet generally misunderstood; therefore I may, I hope, add a few more words on the subject.

A constant remark is that the road is too narrow for a foot-path; now this is certainly not in all cases an argument, as in some of the narrowest streets where the traffic is heavy, both of pedestrians and vehicles, there the foot-path is *indispensable* because the streets *are* narrow; this is the case with most of the narrow streets in the City of London; and it pertains here with nearly the same force in Bentinck Street, and some of the narrow streets by the Strand, where pedestrians cannot with safety, nor without considerable delay, make their way along.

Generally speaking, it may be observed that any difference between 16 feet up to 23 feet width of road, is available for foot-path, because two carriages can pass each other in 16 feet, and three carriages could not pass in less than 24 feet, if moving fast; thus the width of the carriage ways generally run in multiples of 8 feet, and any balance will be available for foot-path. When the carriage traffic is small, then in my opinion the greatest width that can be given to the foot-path, is the greatest improvement; and as I have explained, it is a matter of decided economy so to arrange it.

I have now generally described the system of sewers within the town; and it remains to describe the outfall works from the point of junction between the Circular Road and the Durrumtollah main sewers. At the end of the latter street, the three are all united in one called the 'Canal outfall Sewer,' as it occupies the position of what was formerly the Entally branch canal;

this canal terminated in what was generally known as the cess-pool of Calcutta—an accumulation of filth happily no longer existing—not far from the Circular Road.

This CANAL OUTFALL is a formidable work ; it is 3,284 feet long. Its construction became necessary in consequence of an order of the Bengal Government, which fixed the neighbourhood of Palmer's Bridge as the limit, within which the pumping station would not be permitted ; moreover, the portion of the drainage works then constructed was not allowed to be used, until this large sewer, and the whole of the outfall works were completed. This was in May 1861, and undoubtedly considerable delay in testing the efficiency of the scheme by actual use, was thereby incurred ; also a large additional expenditure of money, on works which up to that time, were considered experimental only.

This canal outfall sewer has a fall of two feet per mile, and at its lowest level is 15 feet below the average level of spring tides during the rainy season.

SILT PITS AND PUMPING STATION.—At its eastern end, the canal outfall sewer bifurcates, each of its continuations is protected by a gate ; and either or both of them can be used as occasion requires. Just within the gate, the invert has a sudden drop of three feet, and then falls to a further depth of eight feet ; thus two large receptacles, 150 feet long, are formed with a sloping bottom, to the eastern end, and each becomes a pit in which silty and solid matter is arrested. This provision was made in conformity with the orders of Government, and to prevent the silt, as far as practicable, from being washed into the canal on the occasion of storms.

The eastern ends of the SILT PITS, as this arrangement is called, are protected by another pair of gates like those before alluded to, but taller to shut out the canal water ; they can be lifted by suitable gearing from above. The intention was, if need be, to allow barges to enter from the canal to take away the silt ; this, however, has been unnecessary, and the gates are only used during the time of heavy storms, when the engines are overpowered by the quantity of water coming down from the town ; they are then lifted and the storm water escapes into the canal. Under the gate platform a culvert is constructed, leading to a well, from which also the suction pipes are laid ; by this arrangement either pump can work either pit.

The pumps and engines are combined, the former on the centrifugal principle. All the parts of the engines and pumps are secured to a large vertical tank, at the bottom of which

the centrifugal disc works. The action is this: the disc receives the fluid at its centre, and revolving with great rapidity, throws it out at the periphery, with a force, which causes it to rise within the tank, to such a level as to overflow into the high level sewer, which conveys it from the pumping station to the Salt Water Lake. As it escapes from the pumps it passes through a surface condenser connected with the engines, and by this means the condensation of the steam, which works the engine, is effected.

The large quantity of silty matter conveyed by the sewers to the pumping station, rendered some especial provision for its disposal necessary; this is effected by the SILT AGITATOR. The apparatus consists of a series of pipes laid along the invert of the silt pits, and to every part of the arrangement where silt is likely to occur. These pipes are furnished with nipples. They are connected with a pair of air blowing cylinders, and a pump worked by a small auxiliary engine; by these means air, or water can be forced through the pipes, which escaping at the nipples, puts all the silt and fluid around them in a state of ebullition, and mixes them up in a state to be pumped.

The surface condensers are also kept clear of deposit in the same way. The chambers over the pits are now generally kept closed, and are ventilated by a flue, which conveys the air from the pits to the boiler furnace, through which it passes to the tall engine chimney. The entire pumping, and agitating arrangement was manufactured by Messrs. Easton, Amos and Anderson of Southwark Street, London, and has worked most satisfactorily.

The high level sewer is 8,284 feet long, and is capable of conveying about two million gallons per hour; its fall is four feet per mile; it terminates in an open excavation through the one square mile of area reclaimed from the Salt Water Lake, which is 8,900 feet long; and at its eastern extremity, distant $3\frac{1}{4}$ miles from the Circular Road, this open channel communicates with a natural stream.

An enormous quantity of silt has accumulated in this open channel during the past two years, and by far the greater part during the last rainy season. A careful measurement shows it to be no less a quantity than 14,00,000 cubic feet which has passed through the pumps, and necessitates the re-excavation of the channel immediately. It chiefly consists of the debris from the road surfaces of Calcutta, mixed with feculent matter; this large accumulation proves the power of the streams running in the sewers to transport it, and to keep them clean; they have done

so to the present time, in a most satisfactory manner: the result is precisely that which was intended.

Some sanitarians still look with doubt on this means of disposal, and are apprehensive that the large quantity of sewage so voided into the locality, called the Salt Water Lake, will be productive of evil consequences. This mixing of the sewage with the natural stream is, however, absolutely unnecessary, and may be avoided, by its utilization on the reclaimed area, which was taken up for this especial purpose; this area may be extended as necessity requires hereafter; as the 28 square miles of the swamp, called the Salt Water Lake, is more than sufficient for the purpose.

Another plan has, within the last four or five years, been proposed for the removal of feculent matters from towns, by what is called the dry conservancy plan, and the use of dry earth.

This has been proposed for Calcutta, as a better and safer method of accomplishing the end in view; and, on the merits of this plan, supported by high authorities, the question has been made to assume the form, Which of the two should be adopted,—the modern dry conservancy, or the antiquated fifteen-year old water-carriage system. Undoubtedly, these arguments have had the effect of causing delay in the execution of the works, by raising the doubt, whether a something better has not been discovered, the adoption of which, would render the expenditure on the drainage works unnecessary.

Nothing I can conceive is more erroneous. Granted, for sake of argument, that the dry conservancy is carried out for the whole city at an annual cost of 20 lakhs,* would the drainage of the city, then, be accomplished? Would not the house drainage of fluid filth, as represented in quantity by the water-supply, still have to be provided for? As also the sub-soil drainage, and the storm water? In order to show the proportionate quantities of these several fluids, I have prepared a colored diagram, the centre spot of which shows the quantity of feculent matter,—the next circular area, the house drainage,—the next what may be assumed to be the sub-soil water; and the largest circle, the daily quantity of the storm water equal to $\frac{1}{4}$ inch per hour over the whole surface. The centre spot is, therefore, as a drop in the bucket; and when providing for the other fluids, the inclusion or exclusion of this really makes not an iota of difference.

The question of expense, is regulated by the question of capacity entirely. The necessity for a system of sewers for Calcutta is, therefore, entirely independent of this question of dry conservancy; having the sewers, the point can be determined whether this matter shall be received or not: in all English towns it is; in Paris it is not; but who that knows Paris would venture to say that it is as sweet even as London. They have a system peculiar to themselves, but they have the sewers nevertheless.

On the subject of dry earth conservancy, I have not one word to say in disapproval. It is suited especially to small villages in England, and elsewhere, if the people could be got to think so. It is suited also for any comparatively small place where labor is cheap and well under command,—such as jails, &c.; but for a large city, like Calcutta, on the score of expense alone, it is simply impossible; it is especially unsuited to the habits and feelings of the great mass of the population; and according to my opinion, it is unnecessary.

These then are some of my views on the subject of the drainage of Calcutta. It is a subject of the greatest importance to every member of the community, and especially so to that portion of it who are by far the most numerous,—*viz.*, the poorer classes. Their welfare is in the keeping and under the control of the rich, and I think it should not be viewed simply as a matter of money.

The subject is especially one which should receive consideration at a meeting like this, convened to inquire into, and promote questions of social science; and if I have been able to explain my views so as to be better understood, than I believe they have been, I shall be most thankful for this, my first opportunity, during fifteen years, of advocating the claims of this important subject on the public attention, and in a public meeting.

DISCUSSION.

[March 25th, 1871.]

THE President rose and said that the first subject to be taken up by the meeting was the discussion of Mr. William Clark's paper on the Drainage System of Calcutta. To those among us who are permanent residents of the city, this was a subject of immense importance. The objects for which so much money had been expended, and for the complete fulfilment of which a good deal of more money would be demanded, were the improvement of the sanitary condition of the town and of the public health. That, as far as the system had been carried out, under the direction and supervision of Mr. Clark, this had been the result, must be patent to the observation of all who recollected what the state of the Southern Division of the city was prior to its being brought into active and successful working order. Down to the period, when all the surface drains were filled up, and the drainage diverted into the under-ground system of sewers, the insanitary condition of the streets was so disgusting and abominable, that pedestrians and others who traversed them were everywhere, and at all times, accosted with smells of the most depressing and sickening description. Although the drainage of this division was still not so complete as was contemplated in the original design of Mr. Clark, yet the improvements which had already been effected were manifest. The ultimate completion, however, of the scheme is only a matter of time.

The system of drainage projected by Mr. Clark is a modification of the under-ground sewerage, which has been carried out in hundreds of towns in Europe. The Chief Engineer to the Calcutta Municipality has avoided some of the cardinal errors committed in England and elsewhere. He has provided against the pollution of the Hooghly by diverting the drainage from, instead of into, the river. His scheme involves the outflow of the ordinary and extraordinary drainage liquids along the gentle decline of the land on which the city is built towards the Salt-water Lake, whilst a further slope has been artificially created to give the channels sufficient fall to enable them to conduct their contents rapidly towards their destination. In this way, not only are the sewerial matters quickly removed, before much decomposition has had time to set in, but, with an adequate supply of water to flood the same, the channels are kept free and open, and the risk of stoppage or obstruction from silting reduced to a minimum. Another circumstance which should be borne in mind is, that the system provides for the removal of the storm-waters, the great volume of which must also help materially to scour out the sewers, and to maintain them in a comparative state of purity and wholesomeness. And when, from deficient supply of water carriage, blocking up may be threatened, means have been supplied for the flushing of the sewers almost to any extent, during the height of the ordinary tides from the river Hooghly. It should also be remembered that, owing to the facilities for flushing the sewers, a smaller slope has been adopted than would otherwise have been found indispensably necessary, thus, *pro tanto*, diminishing the original outlay in their construction.

Mr. Clark has been censured by some of our friends, in the capital of Western India, for going to the expense of carrying off the storm-waters through the sewers. It is said that these waters might have been better transported by surface drains. But as surface drains are always, and especially in India, liable to be constantly contaminated with filth, and as, to render them even partially effective—for completely effective, they would never be in this town—the cost of their construction would have been more than the additional outlay incurred for the purpose of removing the storm-waters along the under-ground sewers. There can, I think, be no doubt that Mr. Clark has used a wise discretion in discarding them, and substituting clean and healthy foot-paths in their stead. Open drains are always a nuisance in the towns of all countries. They are deadly in a tropical city like Calcutta.

Much has also been made out of the influence of the sun in neutralizing the evil consequences arising from open drains. But in the narrow gullies and lanes of the native part of the town, this great deodorizer and disinfecter never gains direct access to the contents of a large number of the open drains. In other situations accessible to the powers of the sun's rays, this influence is in abeyance over a period of more than one-half of the twenty-four hours. As, by the Calcutta under-ground sewers, the materials flowing through them, can be landed at their destination, three miles to the eastward of the city, before decomposition to any material extent has commenced, the consequences predicted to arise from decomposition within the sewers are more imaginary than real. Any amount of putrefactive change which may occur must surely be neutralized by the great facilities which have been provided for refushing the sewers to almost any extent that may be desired.

The office of the sewers is (1) to remove sub-soil water; (2) to drain the houses; (3) to remove the rain-water. All these objects are fairly accomplished by these sewers. Much care and watchful supervision will be necessary in connecting the houses with the sewers. Difficulties may present themselves in the completion of this part of the system. But I trust that Mr. Clark will be able to meet and surmount these difficulties.

Then, again, there is a problem to be solved as to the best and least offensive plan of disposing of the material at the end of the high level sewer on the western border of the Salt-water Lake. Unless this difficulty is soon overcome, the neighbourhood of the outfall must become unhealthy in the extreme. Reclamation and the utilization of the sewage would seem to answer the objects in view. But, at any rate, it is manifest that, in the meantime, it is better to have the filth of Calcutta taken away, in a tolerably inoffensive way, to a distance of three miles, and there to be deodorized by the sun's rays, and I hope to be utilized, than to allow it to fester and decompose in open drains, in the soil, or compounds of houses for a time, thus poisoning air, earth, water, and food with products of the most deadly nature.

The Calcutta drainage system does not poison any source of water-supply used by the community; it does not contaminate our noble river as the Thames used to be poisoned in its passage through London by the sewage of the city, or, as the Clyde, at the present day, is polluted by the sewage of Glasgow. It improves the sub-soil drainage in a way which must increase the healthiness of the ground floors of houses during the dampest months in the year. It carries off the sewage matters from houses, and the storm-waters, in a comparatively inoffensive manner, leaving little or nothing to the carelessness or caprice of individuals, and takes these materials three miles from Calcutta, to a situation from which the wind seldom blows during epidemic seasons of the year. It does this too, so far as my observation goes, before

any material amount of decomposition has had time to set in. It lands these materials in a locality gradually undergoing reclamation by a slow natural process, where they can, I trust, under good management, be turned to profitable account, by being utilized to expedite that process of reclamation. It appears to me that only capital and engineering skill are required to convert what must, if neglected, eventually become a nuisance into a most remunerative undertaking.

Gentlemen, the great interest which I have always taken in sanitation has insidiously induced me to say more than I originally contemplated. I trust anything which I may have spoken in approval of Mr. Clark's system will not deter any one here from exposing defects, should these be found, or be supposed to exist. A healthy opposition in science, as well as in letters and politics, does good. I may state, in conclusion, that Mr. Clark invites the most unsparing criticism of his plans and schemes. Before sitting down, I take the opportunity of asking the visitors, who have favored us with their presence, should they think fit, to join in the discussion.

DR. CHUCKERBUTTY said:—Mr. President and Gentlemen,—Mr. Clark's drainage scheme so entirely meets with my approbation that I might have well remained silent upon the subject. But as it might be said that Mr. Clark's paper was passed over without any discussion or consideration, I am forced to speak if only to show the intense interest I feel upon it.

The principles enunciated by Mr. Clark were nothing but what had been accepted all over Europe. The ends to be attained were, as he has pointed in his lecture,—1st, the removal of the sub-soil water; 2nd, house drainage; and, 3rd, the removal of storm-water. We will take first the sub-soil water, scarcely three feet below the surface, which looks so good and dry; there is in Calcutta a soft black mud saturated with salt-water which held in solution every species of poison to give it out in the hot season under the powerful rays of our tropical sun, and during the rains with the vapours which were continually rising from the over-saturated ground. Mr. Clark has quoted Pundit Madusoodun Gupta to show that diseases were most prevalent in Calcutta from August to November. I have taken some trouble myself upon this subject, and I showed some years ago that diseases in Calcutta were twice as rife during the rains as during those months, though not so fatal. The greatest mortality is attained during the winter. The increased sickness during the rains is so well known that every European who can afford it flies to the Hills or to Europe during that season.

We will take now the storm-water. The storm-water is partly absorbed by the soil, partly evaporated, and partly carried off by the drains. Now it stands to reason that, if the sub-soil water is not drained, there can be little or no absorption by the soil; and if the drains are bad, the storm-water cannot be efficiently carried off by them. The truth of this will be evident when I refer you to the state of Calcutta after a heavy shower before the commencement of the drainage operations. Nineteen years ago nothing was more common than to see the streets of Calcutta completely flooded on such occasions. I say nineteen, but I might easily speak of twenty-eight years, as my experience extends as far back as that. Even so late as 1864, when the great Cyclone occurred before the new drains came into operation, Calcutta was so flooded, including the maidan, that large masses of straw floated down the Dhurrumtollah Street; and when I attempted to go out to see a patient, my progress was stopped by the pit of my carriage getting under water, and my horses not being able to proceed. Nothing of this kind has occurred since the new drains came into play.

We will now take up the house-drainage. This not only means the removal of the waste-water, but also of the night-soil, and a variety of other abominations. My native friends will understand me when I refer them to the Courtyard of their zenana. This Courtyard is the receptacle of the dirty water and every kind of refuse. All this is ultimately thrown into a tank within the compound, or into the street sewers, which are no better than stagnant ditches. Their privies, too, are in some cases constructed upon these tanks or public sewers, and this, though the water of the tank might be used for bathing, cooking, and washing. Could anything be more disgusting and uncongenial to native ideas?

Is it then a matter of no importance to our native friends to avoid all this inconvenience, disgust, and insalubrity? Of great importance most assuredly. I am in the habit of visiting, in the pursuit of my profession, the houses of the rich, as well as of the poor, in both divisions of the town, and I frankly confess that, in the Southern Division, wherever the drainage works have been brought into play, the dwellings even of the humblest cottagers is in an infinitely better sanitary state than the mansions of the richest millionaires in the Northern Division, where the drainage operations have not yet been extended. Permit me to say before I conclude that, before the completion of the water-works, and the partial operation of the new drainage-works, the mortality in Calcutta from dysentery, cholera, and fever was most appalling; and as I have myself written something upon that subject, I will let you know the facts. When I wrote my paper on dysentery in 1865, that disease was so common and so fatal, that sloughing cases of it were of daily occurrence. Such cases of dysentery are now rarely to be seen. My annual share of cases of cholera in the Medical College Hospital, before the completion of the new water-works, was about 700, and I declare to you that, during the last eight months, I have scarcely had a dozen cases of that disease. Fever, too, has decreased during the same period in a like manner. I will repeat to you therefore that Mr. Clark's drainage scheme meets with my entire approbation. It has been a success, not only in the town, but also in the Salt-water Lakes, where a square mile of land, through which the sewage thus runs, has been reclaimed, and from being unproductive, has been converted into smiling paddy-fields, from which the Municipality derives a revenue, and the contractor or contractors a large profit. We know that London was a very hot-bed of plagues, pestilences, and fatal diseases of all kinds before the introduction of the drainage operations, and after that there was so immense an improvement, that people were only too thankful for it. It was only after many years, when the Thames had run unusually low, that any defect was perceived, and that because the sewage was discharged into the river above London. Yet the stench was so strong, and so near the houses of Parliament, that it was decided to remove the point of discharge of the sewers away from the city. But here the sewers do not go into the river at all, but into the Salt-water Lakes, the reclamation of which has occupied the attention of the public and Government now nearly half a century, and which could be effected if the present scheme were fully carried out. Hence on every consideration,—*viz.*, the removal of the sub-soil-water, storm-water, and house-drainage,—the improvement of the roads, the health and convenience of the public, and the reclamation of the Salt-water Lakes, I feel bound to support the drainage works.

DR. KENNETH MCLEOD said:—Mr. Chairman and Gentlemen,—I have recently, for another purpose, been looking into this matter of conservancy and sewage, and I shall briefly relate to this meeting some of the results of my studies.

The question of the disposal of sewage is still undergoing lively discussion in Europe, and authorities are not at all at one as to the best method of removing the night-soil of towns. An elaborate investigation into this matter was recently ordered by the Privy Council, through its Medical Officer, Mr. Simon, who is always in the front rank of those who endeavor to improve the sanitary condition of communities; and most likely, on his recommendation, Dr. Buchanan and Mr. V. Radcliffe were deputed to make an inquiry into the plans adopted in various towns and large institutions of England, for the removal of night-soil, with a view to find out how far existing practices might be improved and rendered more effective and less offensive and dangerous to health. These gentlemen have described in Mr. Simon's 12th Report, besides the water sewage system and its modifications, other systems,—namely, the earth system, the midden system, the tub system, the pail system, and the trough system,—while they accord an unqualified preference to a well-ordered system of water sewage. They show that each of the others may, under certain circumstances and arrangements, be worked without much offence or risk. The great principle which they lay down is that, as little as possible must be left to the will of the individual, for they point out that the lower classes in large towns are not to be trusted in this important matter, and that arrangements must be devised under the control of a special agency, which will ensure frequent periodical removal of offensive matter, independently of the will of the individual. But the water sewage system, in its perfection, contemplates an immediate and continuous removal by mechanical agency, so that the question of water sewage, as compared with other possible plans, is one of *mechanical agency versus scavenging*; and however expensive or elaborate the latter may be, there is always in it the unstable element of animal agency and will, which cannot compare in efficiency, with the involuntary mechanical agency, supplied by water acting by and through a properly devised and constructed system of conduits. It will be well if Mr. Clark were to tell us something of these alternative plans as applicable to the circumstances of this country and Calcutta. A great deal has been said in discussions on this subject about the utilization of sewage. Well this matter wears a different complexion in this country. At home there is a demand for this material, and it is valuable and saleable, and its sale diminishes the cost of conservancy arrangements. Here there is no demand for, and indeed little need of, it, and the object of utilizing in the case of the Calcutta sewage is to remove offence, and to prevent the material from blocking up the outlet channel. There is also here no fear of contaminating a source of water-supply, for the water which is now liable to contamination, is not a source of water-supply. But one necessary condition of such utilization is that the material shall be applied to the land before decomposition has set in, and that, under present arrangements, cannot be accomplished in Calcutta. In England it is found that the value of sewage is diminished by over-dilution, and that sources of water-supply are contaminated. Hence the great attention bestowed on this branch of the subject. Another very valuable investigation has recently been published under the following circumstances:—Dr. Hewlett, the Medical Officer of Health for the town of Bombay, employed a recent furlough in studying the conservancy arrangements of thirty English and Scotch towns. His report on the subject has been published by the India Office, and in it we find the same unqualified testimony in favor of the water sewage system which the skilled officers employed by the Privy Council have borne. Dr. Hewlett points out, however, that the accumulation of night-soil at dépôts or middensteads, previous to its disposal by water agency, is a most unsanitary

and offensive arrangement. This is precisely the system which now obtains in Calcutta, and Mr. Clark should inform us what prospect there is of completing the system he has so well devised and described; what difficulties oppose it, and what arrangements are being made to secure the perfection of the system, by supplying the inhabitants of Calcutta with water-closets fitted with contrivances that will ensure, without any active interference on the part of the individual, the immediate removal of night-soil and its arrival at the outfall before decomposition has commenced, for this must be the object steadily held in view, for eventual fulfilment, as regards the whole town.

MR. J. B. ROBERTS said,—I would offer my thanks to the Committee of the Social Science Association, for the courtesy which moved them to invite me to this meeting, and to you, Sir, as President, for the privilege which you have announced to admit of non-members of the Association taking part in the discussion of that most important subject to the dwellers in Calcutta, the merits or demerits of Mr. Clark's system of drainage. I am present here, not to reiterate my opinions in favor of that system, but to hear objections and adverse criticism, for the purpose of replying to them, or myself becoming a convert. I have waited for those who differ from me to rise and advance their views, but time is running on; and in the absence of the criticism I hoped to hear, the marked absence of my Native friends whom I expected would be the chief objectors to Mr. Clark's system, as applied to the northern part of Calcutta, leaves me little to say, for I will not waste time by going over the ground I have taken up so often at Municipal Meetings of the Justices. I am content, therefore, for the present to assert that, in my opinion, the natives are entitled to be heard patiently and thoughtfully as objectors to the new drainage. All I would ask of those who may produce arguments adverse to Mr. Clark's system, is to do so in a thoroughly honest, open, undiplomatic way, putting forward prominently their salient points, and not putting out of sight the real motive for objections, as diplomatists, especially of this day, are so apt to do. I for one should show no spirit of obstinacy, or desire to accept nothing the Native community could suggest. There is, however, one point on which I shall be very obstinate, wherever I have opportunity, and that will be to oppose the construction of these expensive but necessary works, unless the money is raised for them by loan on low interest, for I hold it to be a wrong, a wicked wrong, to the rate-payers, that these expensive and permanent works should be constructed out of annual revenue,—the cost must be shared by those who shall come after us.

DR. D. B. SMITH said:—Mr. Chairman and Gentlemen,—I am glad to have the opportunity of being allowed to make a few remarks on Mr. Clark's Drainage Scheme, because I feel sure that all who have paid any attention to the subject must allow that it is one of the very highest importance to the interests of the people of Calcutta. The fact which is noted by the Chairman, that Native society is in a state of agitation on this subject, goes to prove that some interest is taken in the question—how best to get rid of the impurities of this city.

Gentlemen, I have devoted a good deal of time and attention to Mr. Clark's scheme, perhaps more than most of you here present; and, therefore, I am anxious to lay my opinions before you plainly, impartially, and without any desire to exaggerate, or to be unnecessarily controversial. Mr. Clark himself has allowed, in writing, that I have "evinced an honest endeavor to ascertain the real merits of his scheme," and that I have "made it the subject of strict and

unprejudiced enquiry." My opinions on this subject are easily summed up. They are already in print, and fully set forth in a Report (on "the Drainage and Conservancy of Calcutta"), which was published by the Government of Bengal about two years ago. To the opinions therein expressed, I still for the most part adhere. Briefly put, they are somewhat as follows:—(a) Mr. Clark's scheme is a great improvement on the old state of things; (b) it ought to be completed; (c) its chief defects seem to me the following—it would be better if solid excreta were not removed with the drainage; (d) the present condition of the outfall is highly unsatisfactory.

I will, if you will allow me, make a few remarks on each of these points separately:—

(a). Mr. Clark's scheme is a great improvement on the old state of things. If we wish to see what the old state of things was, we have only to go to the northern portions of Calcutta—for example, to the narrow streets at the back of Chitpore Road. There we see every kind of abomination, and it is scarcely too much to say that the laws of cleanliness and of health are violated at every turn. Moreover, the system of conservancy there adopted is very inefficient.

Allowing then that the northern parts of the town are very filthy, I can scarcely understand the Natives, particularly native gentlemen of education, in any way resisting reasonable propositions for its improvement.

As a *drainage* scheme (I purposely omit the question of *sewage* at present), I say, without any misgivings, that I believe Mr. Clark's project will prove very effective, and worthy of his high reputation as a well-known and eminent Engineer.

Experts of undoubted authority have approved of it as an engineering work. It would, therefore, ill become me to criticize it from this point of view. I have no wish to do so. But it is not merely a drainage scheme. It is a *sewerage* system,—i. e., it takes away all the refuse of human habitations, and not only the water of drainage and of rain-fall. It is, therefore, not right to speak of Mr. Clark's scheme as one of *drainage* only. It is much more than this; it professes to be the most complete kind of sewerage. It is very important to bear this in mind. Even although the drainage project has been approved by highly competent authorities, there is no reason why it should not be discussed, from different points of view, at a meeting like the present. It is truly said that free discussion never hurts a good cause.

I particularly desire to say that any remarks I make on the present occasion, are intended simply as fair criticism of the subject before us, and not in any way as pleadings in behalf of foolish prejudice and obstructiveness.

The most important result of Mr. Clark's work will, it appears to me, be the *sub-soil drainage* of Calcutta. On this subject I wrote as follows two years ago:—

I regard this as the conspicuous merit, in a hygienic point of view, of Mr. Clark's scheme.

If it accomplished nothing but this—the *sub-soil drainage of Calcutta*—it would be worth all the money that has been or is likely to be expended on it. When this is achieved, it will be quite an era in the history of Indian sanitation.

The vast importance of sub-soil drainage is proved by the following extract from a very able Report published in 1865 by the Council of Hygiene and Public Health at New York:—

"In three of the badly drained districts noted for their insalubrity, a series of *hygrometrical observations* was kept up during the warm season. With

regard to practical results from those observations, we need only state in this place, that any marked degree of excess of humidity in any locality, as compared with the standard observations at Essex market, was, without exception, found to be associated with an excessive constant sickness-rate, and particularly with infantile diseases and all kinds of contagion and infection."

Mr. Clark has very properly dwelt upon this subject at page 12 of his pamphlet (printed Address).

I now come to the third division of my subject,—Mr. Clark's scheme is not without faults. It is true that many of its defects are such as are inherent in all schemes of the kind, and it does not at all follow that, because we perceive certain weak points in it, we should therefore condemn it altogether. At the same time I will say that certain apprehensions, which are entertained regarding it, appear to me to be not altogether ill-founded. Objection is taken by some to the street gullies, or to the ventilation grids and smaller drains; others most fear the power and effects of the "storm-waters;" while the cost is what all must regard with interest and anxiety. Mr. Clark declares that he can thoroughly command the storm-waters, or at least prevent their doing much harm. He also promises to prevent all evil effects that might arise from the escape of sewer gases into dwellings. This he intends to do by gratings, and pits or traps acting on the syphon principle. I hope he may succeed in achieving all that he desires. Yet, with the medical testimony of past times before us, we cannot possibly forget that, in spite of all the science and care which is brought to bear on this subject in England, the escape of sewer gases (gases of decomposition) is by no means a thing unknown; on the contrary, that it occurs frequently, and that it is directly associated, by medical men, with the prevalence of that terrible disease—typhoid fever.

Again, Mr. Clark's scheme is still incomplete. It has not yet reached the northern parts of the town; and even in the southern parts it has been successfully completed only in some places. I mean to say that those places are as yet quite exceptional where we have house-drains and water-closets all complete and in working order; and yet this part of the work, which may be called the private portion of it, is perhaps of even greater importance than that which relates to the construction of the larger sewers. We have yet to learn from experience whether the water-closet and house-drain system in Calcutta is good and harmless. We cannot at present form a fair judgment on this point. I must say I fear it will prove not altogether so free from objection as some are inclined to believe. At present the sewers convey vast masses of filth in a state of decomposition, and they pour a flood of putrescent matter into the water-course intersecting the low, undrained land of the Salt-water Lake area.

I have thus arrived at the conclusion that the drainage scheme is a very good one, *so far as it is a mere drainage scheme, and nothing more*. It is a very great work, evincing much practical knowledge, skill, patience, and care. The full engine-power is capable of lifting one million gallons per hour; and when the drains are complete, they will be upwards of 100 miles in length. As far then as mere drainage goes, Mr. Clark will be, and I believe he has already proved himself to be, a great public benefactor. But I now come to what appear to me to be the two main defects of his system regarded as one of *sewerage*, and not of drainage alone: *1stly*—The solid excreta should be excluded; *2ndly*—The outfall arrangements are very defective. With regard to the solid fecal matter, Mr. Clark says of his system:—"It will convey away here, as in other places, perfectly and innocuously all the solid and fluid excreta of the population." Gentlemen, I much doubt it; but I shall return

to this point. I proposed to relieve Mr. Clark's scheme of the solid excreta, and so leave it, as it appears to me, an infinitely better project than it is at present (a true drainage scheme, and not a thorough sewerage one). But Mr. Clark supposed that comparisons were being instituted, which were unfair. I for one did not wish to establish any comparisons between two things which are entirely different in their nature, and therefore not to be compared; but, with others, I believed that it would be better to take the solid excretal matters away separately, and I pointed out how this could best be done. Mr. Clark says:—"If a dry conservancy system were carried out, the drainage of Calcutta would remain as absolutely an indispensable necessity to the health and well-being of the inhabitants of Calcutta as it is now." *This is perfectly true*; but some believe that the converse of this proposition is also not only true, but a matter of much importance,—i. e., even although the drainage were *perfect* in every respect, the solid faecal matter ought to be removed separately.

Mr. Clark makes out the annual cost of a dry conservancy system for Calcutta to be *twenty lakhs of rupees*, or £200,000! My calculations and estimates on the same subject will be found at p. 106 of my Report. Briefly they amount to this:—To carry out a system of dry conservancy for Calcutta (whereby 200 tons of night-soil and sweepings would daily be removed from the city) would cost something like Rs. 1,64,383 *per annum*, over and above the cost of the present Conservancy Establishment, which amounts to Rs. 1,43,066. This extra charge would render it possible greatly to increase the present Conservancy Establishment of the town; it would pay for the daily transport by rail of 200 tons of waste matter to the Pallee river, which is 18 miles from Calcutta; it would cover the rent of four square miles of land to be taken up for agricultural purposes; and it would also meet the cost of a very large establishment, numbering 500 coolies, who would remain on the ground which was to be reclaimed, and who would, without delay, mix the night-soil with earth, convert it into *poudrette* by means of pug-mills, and then dispose of it on the fields.

I calculated that the profits of such land-cultivation would, several times over, cover the cost, not only of the extra establishment entertained, but even of all the conservancy charges of Calcutta; but even if all current expenses merely were thus re-paid, without there being any profits whatever, all that is desired would be fully realized. I still believe that some such scheme comprises the best mode of getting rid of solid excreta, which, in my opinion, cannot, with safety, be allowed to pass into the drainage system of Calcutta.

I am well aware that, in connection with such conservancy problems, there are two opposite parties. In favor of the dry-earth system, the following is worthy of your attention:—

"In December 1865, the Secretary to the Government of India, in the Military Department, in his letter No. 1326, dated 30th November, to the address of the Quarter-master General, distinctly states that the Right Hon'ble the Governor General and His Excellency the Commander-in-Chief are perfectly in accord as to the superiority of 'the dry-earth system of sewage.'"

Dr. Edward Goodeve, who was for many years in Calcutta, and whose judgment is a very valuable one, as probably most of you know, has written on this subject as follows:—

"Some surprise was expressed in Europe on the absence of sewage or drains for our Indian barracks and hospitals. It would not be difficult to show that the dry system is most suited to the purpose even in England, much more is it suited to India. If to the daily removal system be added the dry-earth

conservancy, which is now greatly in use in India, there can be little doubt that the problem of the best possible way of dealing with the *excreta* would be solved, and that the plan would be far preferable to that of sewers and drains."

Again, Dr. Mouat believed "in the absolute necessity of separating the sewage of Calcutta from its drainage." In a memorandum which he wrote on this subject, he expressed the following opinion:—"The result of this ill-assorted union will be disease and death in a larger measure than prevails at present, with all the abominations of the open earthen sewers of the native town."

Again, Dr. Cornish, the Sanitary Commissioner of Madras, who has devoted much attention to this subject, writes thus:—

"There is no doubt that the 'dry' system of conservancy is the best that could be devised for a country where the temperature of the air is always high.

"The evils of the sewage system in Europe are now gradually becoming apparent; and in another quarter of a century, there is no question but that the nuisance will have become so serious as to lead to a thorough change of system. The rivers flowing through towns are in many instances already so polluted, that fish will not live in them, nor can the public drink of such water with impunity." Again:—"The water-closets, house-drains, and sewers in European towns, it may be noticed, remain inoffensive during the months of spring and winter; but as the temperature of the air increases, so surely do the *cloacæ* begin to emit offensive effluvia; and the hotter the summer and autumn, the greater the nuisance from drains and running streams polluted by sewage. Whenever the temperature of water rises above 60° Fahr., it ceases to absorb gases well, and becomes therefore a bad vehicle for the removal of organic matter in a state of decomposition."

It may here be mentioned that, from 350 observations made by Mr. G. A. Prinsep, the mean temperature of the surface water of the Hooghly, everywhere between Calcutta and the sea, was found to be 81° Fahr.

I am aware that the Army Sanitary Commission in England recently concurred in the opinion expressed by the Justices of the Peace for the Town of Calcutta, that my proposals for removal of the night-soil of Calcutta cannot be entertained, or at least need not be discussed, on account of the great cost they would involve. I bow to the opinions of such high authorities. At the same time, gentlemen, it is worth while asking what is really being done at the present time. I will tell you. The Calcutta Suburban Municipality are daily sending down, by rail, in covered receptacles, nearly ten tons of night-soil to the Pallee bridge, at a daily cost of (I think I am right in saying) Rs. 47-13. Thus, in point of fact, that part of my scheme which entails expense (and which has just been rejected on account of its cost by the Army Sanitary Commission) is *actually adopted*, and being carried out; whilst no effort whatever is made to counter-balance this by reproductive cultivation. Ten tons of valuable manure are daily taken away at great cost,—i. e., at a cost of Rs. 1,434-6 *per mensem*, or Rs. 17,214 *per annum*; and what is done with it after it has been conveyed 18 miles from the city? It is thrown into the Pallee river. It must be allowed that this is a very wasteful process, and all I will say is that such a mode of procedure is infinitely more expensive than the measures which were suggested by me—measures which have been summarily rejected at the very time when something like half a million sterling is being voted for the continuation of Mr. Clark's drainage system.

If the Salt-water Lake area is to be reclaimed in connection with the drainage system, we must remember that the estimate for this great work alone was

over *seventeen lakhs of rupees*. Either this must be considered an integral part of Mr. Clark's scheme, or it must be regarded as a separate affair altogether, the object of which will, in a measure, be to rectify the evils of Mr. Clark's sewage operations at and beyond the Tengra outfall. Unless reclamation is had recourse to, the evils at the outfall must increase. Colonel Hyde, foreseeing this, has all along concurred with those who plead for regular sewage irrigation and cultivation. Failing this, he pointed out that an artificial cut might be made through the Salt-water Lake from Tengra, to a point in the Bidyaderia river, where there would be a certainty of the sewage being carried away. Self-acting sluices would be required at either end of this cut, "so as to permit only of the ingress of the time at Tengra and its egress towards the Bidyaderia. The intermittent stream (which could be well scoured by a reservoir at Tengra) so produced, uniformly flowing to the east, would, with certainty, carry away all sewage turned into it." This seems to be a proposition well worthy of consideration at the present time.

Mr. Clark writes,—"The drainage system will be a permanent work of great original cost and small annual expenditure when completed." I hope it may be so; we have no precedents in India to judge by. The drainage of the city of Glasgow (with a population, like Calcutta, of something like half a million souls) is said to produce deposits in the harbour of the Clyde, at the rate of 100,000 cubic yards yearly, and to entail an annual expenditure of £8,000 for its removal. It may be that much more thorough clearance is there required for purposes of navigation than would be necessary at the Salt-water Lake. At the same time it must be remembered that the deposit of silt must be very much greater in the case of the Calcutta drainage than it is at Glasgow. In any case, I think it not improbable that a considerable sum will annually have to be set aside under this head, even after the drainage is complete; indeed, it will necessarily be much greater after its completion than it is at present.

Mr. Clark writes of the "dry system" as follows:—

"On the subject of dry-earth conservancy, I have not one word to say in disapproval. It is suited especially to small villages in England and elsewhere, if the people could be got to think so. It is suited also for any comparatively small place where labor is cheap and well under command, such as, jails, &c.; but for a large city like Calcutta, on the score of expense alone, it is simply impossible; it is especially unsuited to the habits and feelings of the great mass of the population; and, according to my opinion, it is unnecessary."

You will perhaps agree with me that the *necessity* for the dry conservancy scheme need scarcely be discussed if it be allowed to be *impossible*. Further, I have yet to learn that there is anything in the manners of the Hindoos to warrant us in keeping waste matters away from the soil; rather perhaps are under-ground sewers and water-closets alien to their traditionary customs and modes of thought.

I now come to the outfall arrangements at Tengra. In my humble opinion, they are very defective and faulty. Mr. Clark has written as follows on this subject:—

"The high-level sewer is 8,248 feet long, and is capable of conveying about two million gallons per hour; its fall is four feet per mile; it terminates in an open excavation through the one square mile of area reclaimed from the Salt-water Lake, which is 8,900 feet long; and at its eastern extremity, distant $3\frac{1}{2}$ miles from the Circular Road, this open channel communicates with a natural stream.

"An enormous quantity of silt has accumulated in this open channel during the past two years, and by far the greater part during the last rainy season. A careful measurement shows it to be no less a quantity than 1,400,000 cubic feet, which has passed through the pumps, and necessitates the re-excavation of the channel immediately. It chiefly consists of the *débris* from the road surfaces of Calcutta, mixed with feculent matter. This large accumulation proves the power of the streams running in the sewers to transport it, and to keep them clean; they have done so to the present time in a most satisfactory manner; the result is precisely that which was intended."

To my thinking, gentlemen, the blocking up of the Tengra channel should be regarded as a *consequence* rather than as the *avowed object* of the drainage system.

I am not an advocate for magnifying the importance of undetected germs of disease. If human vision, the microscope, and chemical analysis, fail to detect impurities, they may pass. But here we have 1,400,000 cubic feet of silt mixed with feculent matter in a state of decomposition; in other words, we have a channel nearly two miles in length choked up with pestilential sludgy mud and decaying sewage refuse; at least, we had this a short time ago; it is now being cleared out. Coming events cast their shadows before them, and I have visions of other water-courses polluted and blocked up by masses of mud and feculent matter. The destruction of putrescent organic matter by oxygen in water is neither so rapid nor so perfect as some formerly believed. We must remember that our Calcutta sewers do not carry off night-soil before it has commenced to decompose; whilst the effluent waters at Tengra visibly contain faecal matter in suspension, undissolved and unoxidized.

I am aware that Mr. Clark does not think at all so seriously of this fact as most medical men do. He writes on this subject as follows:—

"Granted, for sake of argument, that the dry conservancy is carried out for the whole city at an annual cost of *twenty lakhs*, would the drainage of the city then be accomplished? Would not the house-drainage of fluid filth, as represented in quantity by the water-supply, still have to be provided for, as also the sub-soil drainage and the storm-water? In order to show the proportionate quantities of these several fluids, I have prepared a colored diagram, the centre spot of which shows the quantity of feculent matter; the next circular area, the house-drainage; the next, what may be assumed to be the sub-soil water; and the largest circle, the daily quantity of the storm-water equal to $\frac{1}{2}$ inch per hour over the whole surface. The centre spot is, therefore, as a drop in the bucket; and when providing for the other fluids, the inclusion or exclusion of this really makes not an iota of difference."

I am well aware that there will be great dilution, yet it is quite possible that there may be danger nevertheless. The excreta of Calcutta will be mixed daily with twelve million gallons of water, so that the dilution of both liquids and solids taken together will be as 1 in 120, while the dilution of the solid excreta alone will be as 1 in 390. And Mr. Clark adds:—"If this is not high enough for safety, the limit may be attained by the employment of more pumping power." We naturally ask, what is the limit of safety in such a matter? The following opinions are amongst the latest from England on this subject. In a new and able work (recently received) on the "*Treatment and Utilization of Sewage*," by Dr. W. H. Corfield, Professor of Hygiene and Public Health at the University College, London, a work prepared for the Committee of the British Association, I find the following extract from the First Report of the Commission on River's Pollution:—

"We are led in each case to the inevitable conclusion that the oxidation of the organic matter in sewage proceeds with extreme slowness, even when the sewage is mixed with a large volume of unpolluted water; and that it is impossible to say how far such water must flow before the sewage matters become thoroughly oxidized. It will be safe to infer, however, from the above results, that there is no river in the United Kingdom long enough to effect the destruction of sewage by oxidation."

Again a portion of Sir Benjamin Brodie's evidence before the same Commission runs as follows:—

"I believe that an infinitesimally small quantity of decayed matter is able to produce an injurious effect upon health. Therefore, if a large proportion of organic matter was removed by the process of oxidation, the quantity left might be quite sufficient to be injurious to health. With regard to the oxidation, we know that to destroy organic matter, the most powerful oxidizing agents are required: we must boil it with nitric acid and chloric acid, and the most perfect chemical agents. To think to get rid of organic matter, by exposure to the air for a short time, is absurd."

The recommendations submitted to Her Majesty by this very important Commission were to the following intent:—

"That the casting of any solid refuse, or the discharge of any polluting liquids, such as those defined above, into any river or stream, be absolutely prohibited under adequate penalties; and that a central authority or board of not more than three persons be established with power to enforce the enactments relating to the pollution of streams, and to ascertain and cause to be removed the sources of contamination of public and domestic water-supply."

Again, in the Report of the Select Committee on the Metropolis Sewage (known as Lord Robert Montagu's), it is stated that—

"No efficient artificial method has been discovered to purify, for drinking and culinary purposes, water which has once been infected by town sewage; by no known mechanical or chemical means can such water be more than partially cleansed. It is always liable to putrefy again. Processes for filtering and deodorization cannot, therefore, be relied upon to do more than mitigate the evil. Water which appears perfectly pure to the eye is sufficient, under certain conditions, to breed serious epidemics in the population which drinks it."

I know Mr. Clark will say that this does not apply to the case of Calcutta, because the sewage is voided into streams from which the people do not drink. This is true; yet the general pollution of a river may be a matter of serious moment, in a medical point of view, even although its water is not used for drinking purposes; and I may here mention that I am informed by Mr. Galiffe, Collector of Canal Tolls, whose official duties take him a great deal to the Salt-water Lake channels and the canals on this side of them that, within the last year, vast quantities of maggots have appeared (during the hot weather) in the water-courses now referred to. This is a new thing since the sewage was voided at Tengra.

The above extracts, gentlemen, serve to show how this question of river pollution and of sewage dilution is regarded by some of the highest authorities in England. I am of opinion that we should not trust to great dilution of solid excreta with water. On this subject I expressed myself as follows two years ago:—

"It is quite true that, while a small quantity of water favors putrefaction, a large quantity diminishes the same tendency; and it is also to be allowed that minimizing an evil is good, so far as it goes. Yet indefinite dilution with water

will not destroy septic poisons, and he would be an over-confident man who would assert that he could determine the point of dilution at which all danger ceases. Modern experiences tend to establish the belief that fecal matter, although diluted to a vast degree, may be productive of the most disastrous results. The history of the 'East London Outbreak' of cholera, the facts of which were so deeply scrutinized by Drs. Farr and Radcliffe, ought to teach us to be very careful how we pronounce in favor of water-dilution as a source of safety against fecal poisoning. Whether the cholera in question originated from contamination of the reservoirs at Old Ford, or whether, as others believe, it was due to the storm overflows of the Metropolitan Sewage-works, everything goes to prove that danger is to be apprehended from effete organic matter in a state of decomposition, how great soever may be the quantity of water holding it in suspension. The limits of the developing power of animal poisons are altogether undetermined."

To countenance the discharging of human ordure into water-courses, no matter how great may be the quantity of water present, is to encourage the introduction of what the editor of the *Lancet* terms "the thin edge of a vicious principle." In 1861, Captain (now General) Beadle pointed out that the canal, where it forms a basin towards the city, ought to be shut off, so as to receive no polluted storm-waters. Colonel Hyde, to whose opinion much weight will always be attached in India, was from the first averse to sewage being discharged into the deep water channel of the Salt-water Lake. I do not for a moment mean to imply that Colonel Hyde is an opponent of Mr. Clark's drainage system; on the contrary, he has always strongly supported it. I merely here cite his opinion regarding the pollution of water-courses by the introduction of sewage.

As I have already shown you, Dr. Mouat was violently opposed to any such mode of disposing of night-soil. Mr. Longride, a Civil Engineer, who made a special study of the subject, was equally opposed to the voidance of sewage into the channels and creeks beyond the Tengra outfall. Dr. Chevers has, for many years, persistently warned the Municipal Commissioners against the danger, in a sanitary point of view, of voiding the sewage of Calcutta (even when diluted by storm-waters), in the direction of the Balliaghatta canal. Lastly, Mr. Leonard, whose judgment is known to be very cautious, careful, and valuable in such matters, has written as follows:—

"I have always said that this disposal will not do; the matter will not float away; it will be a nuisance to the canals, and I believe even to Calcutta itself." Again he writes:—"It will not do to drop it into the Salt-water Lake channel, and there allow it to float about—a nuisance to thousands. To pour into this locked-up basin the drainage of Calcutta, for a considerable part of the rains, would, I think, in a short time, render the place deadly. I am aware that the water would be entirely flood-water, and that the offensive matter contained in it would be highly diluted, so much so, that I think, if the contents thus diluted could pass away through the canals without obstruction, the admission of the flood-water from the sewers would not be seriously objectionable; but if it were received in an enormous basin, where the sewerage could settle down, and only the tolerably clean water pass off over an outlet, the foul matter would soon accumulate to such an extent that the canals would become poisonous."

You will thus see, gentlemen, that I am by no means singular in somewhat dreading the effects of the present system, in its relation to solid excretal matter. Setting metaphor aside, let us ask—What, as a matter of fact, is the quantity of sewage which Mr. Clark calls "a mere drop in the bucket?"

When the drainage system is complete, the solid excreta will probably amount to over 100 tons a day. At present, I am told, it is something like 40 tons, which may, in a sense, be hidden, but it is all there nevertheless.

In having recourse to vague figures of speech, I think Mr. Clark treats this part of his subject in an unscientific manner. Indeed, some may think that he even lays himself open to the charge of trifling with a great subject, inasmuch as his style of reasoning implies a magnificent disregard of facts and past experience of great importance. To argue on the "potentialities" of matter from mere quantity, is, I contend, not the proper way to look at this subject. By the same faulty logic we might say that, because a small-pox vehicle is very small, that therefore it cannot be productive of much harm. But what is the real truth? It is almost unnecessary to tell you, gentlemen, that, from that single speck of animal poison, a whole population might be infected. Again, a plague-spot on the human body was a small thing in itself, but it was the almost certain precursor of death. Professor Huxley tells us of chalk formations which are 1,000 feet thick, but which entirely consist of the skeletons of animalcula, each one-hundredth of an inch in diameter. I need scarcely trouble you with similar illustrations. The question is not what a single drop or a single unit of any kind can do; but what an infinite multiple of such units may do in the course of time. The actual result of draining into European rivers and into the sea is indicated in the following passage from my Report:—

The condition of the Thames at London, the Clyde at Glasgow, the Medlock and Irwell at Manchester, the Tame at Birmingham, the Mersey at Stockport, Birkenhead, Liverpool, and Booth, the Seine at Paris, the Elbe at Hamburg, the Iser at Munich, and the Danube at Vienna, has, at one time or another, arrested public attention, from the dangerous degree of sewage-pollution that had been reached. Similarly, it has been pointed out that the harbours of Rio de Janeiro, Havannah, Brest, and Marseilles, are in the most intolerably filthy state; whilst the open sea itself at Naples, at Cadiz,—and to go nearer home—at Brighton (burdened with privy filth, the odours of which sea-breezes cannot dissipate) is foul and obnoxious.

Represent the matters figuratively as we may, the broad fact remains that hundreds of tons of noxious matter are here being disposed of on wrong principles.

This is no assumption, but a simple demonstrable fact. Experience justifies the statement that this is dangerous (as the extracts which I have read fully prove); experience further negatives the assertion that such an accumulation of feculent matter need not be thought of with any anxiety, because it is largely diluted. I think it is much to be regretted that so high an authority as Mr. Clark should publicly enunciate as true maxims which are opposed to much valuable medical testimony.

But I gladly pass to a subject on which Mr. Clark and I *entirely* agree,—I mean the reclamation of the Salt-water Lake area. Gentlemen, I feel that I have already greatly taxed your patience by speaking at such length, and I regret to find that I have not time at present to go carefully into this most important subject of reclamation. All I will say is that I am as staunch an advocate for it as any man can possibly be,—indeed, that I regard it as a great sanitary necessity in connection with the present drainage and sewerage system. Unless the land is reclaimed and utilized, the sewage must, as at present, be allowed to pass into the tidal channels and creeks of the brackish lake area, which is to be avoided by all possible means. *Forty-one years ago*, Lord William Bentinck (who had for 14 years been a Commissioner of Drainage for the Lincoln Fens)

wrote a minute on this subject, urging the importance and feasibility of thoroughly draining and reclaiming the salt marsh adjoining Calcutta. He was supported in his views by very high engineering authorities; and the Court of Directors were pleased to approve of the suggestions as promising "much public benefit," and as "affording a gratifying proof of their Governor-General's desire to improve the commerce of India, and increase the salubrity of Calcutta and its vicinity." The lake, as you know, still remains unaltered and unreclaimed! This is indeed a subject which should not be allowed to rest.

I have now, gentlemen, only to apologise for having taken up so much of your time, and I beg to thank you for having given me so patient and attentive a hearing.

BABOO PEARY CHAND MITTRA said that the only question before the Meeting was, whether Mr. Clark's system of drainage was the best Calcutta could have in an engineering and sanitary point of view. He confessed that he was not competent to express an opinion on the subject, but he did not at all blame his countrymen for not accepting the system at once, as they were not satisfied that it was unexceptional in every respect. Some of the honorable speakers, who had preceded him, had alluded to the existing system of drainage being very defective, but this nobody ever denied, and the fact of Mr. Clark's system, being in partial operation, is a conclusive proof of its condemnation. It has been asserted that the natives were "obstructive." This, Baboo Peary Chand Mittra begged to state, was not quite correct. It is well known that Dr. Mouat, at one of the Meetings of the Justices, had denounced Mr. Clark's system in the strongest of terms as being unsuited to the climate of Bengal, and instrumental in the generation of disease and pestilence. Dr. Mouat knew the country, climate, and people intimately from his long residence, and his opinion was entitled to great consideration. Was there any wonder if this strong expression of opinion unsettled the native mind? and what have they heard to-night? Of the four learned doctors who had spoken, two were in entire favor. One, as far as he could be understood, was not in entire favor, and the last (Dr. Smith) spoke in strong condemnation of an important part of the scheme. Baboo Peary Chand believed that, when Dr. Smith's remarks were published, the natives would really be "obstructive" if they had not been before, as the scheme must be *unexceptionable* in every respect, involving as it did an immense sum of money, before it could be conclusively accepted by the Natives, who are naturally anxious that the scheme should not be tried *experimentally*, nor received on *trust*.

Mr. W. Clark had listened attentively to what had fallen from previous speakers, and had been gratified to find that, with one exception, all had spoken approvingly of the scheme for draining Calcutta. Several suggestions had been made, which, in replying to his friend, Dr. David B. Smith, he should be able to notice.

Dr. Smith also had begun his remarks with much that was intended to be approved; but as he continued his long speech, his criticism had become more and more severe. He (Mr. Clark) thought Dr. Smith had said that which was calculated to mislead, and he appealed to those who had heard the remarks, whether the impression left in their minds regarding the dry earth system (or the dry conservancy system, whatever it was) that Dr. Smith now advocated, for it seemed that he had changed his ground), whether that system was not capable of doing for Calcutta what the drainage was intended to do, and better than the drainage could do. In fact, he had drawn a comparison

between the two systems. This is exactly what he (Mr. Clark) had to complain of in Dr. Smith's Report. He condemns the system, because the smallest possible part of its capabilities are applied to a use which he did not approve.

He absolutely condemns it, even though he takes some pains to state that, if this use of the system had not been introduced, the whole would have been worthy of the highest commendation.

In his Report he says:—"What might be done for the cleansing of Calcutta on the dry earth system with a million pounds sterling? With such a bill for water-carriage, some might think it somewhat inappropriate to boast of municipal economy." (Report, page 38.)

Page 45.—"I would here in passing again ask—"What might not have been done on the dry earth principle for a million pounds sterling, which the present system will cost before it is finished?"

Page 61.—"I shall here glance in a general way at the merits of dry-earth conservancy as compared with the hydraulic sewage system."

These were extracts from Dr. Smith's Report, from which he had himself so largely quoted. If language means anything at all, these extracts were calculated to convey the impression that there were two ways of doing the same thing, and in Dr. Smith's opinion one was far superior to the other. Hence the drainage-works, some how or other, or in some degree, seem to be wrong. This was the impression conveyed by what had just been said. He (Mr. Clark) was anxious to remove any such impression, as one likely to obstruct the further progress of the improvement. Dr. Smith, in the course of his remarks, told them it was not the quantity of the matter to be dealt with, but its properties, which should be considered, and he instanced the effects which may be produced by the smallest quantity of some poisonous substances. How the comparison would apply, he (Mr. Clark) did not here propose to enquire; but Dr. Smith was entirely wrong in discarding quantity as an element for consideration. Practically, so far as the actual drainage-works are concerned, it is absolutely and entirely a question of quantity, and the provision to be made for this regulates to a great extent the cost of the whole.

To illustrate what he stated, the diagram alluded to in the paper was exhibited, showing the comparative volumes of the various matters to be conveyed away. Here the faecal matter was represented by a small red spot one inch in diameter, while the rain-water was represented by a circular area several feet in diameter. If provision had to be made for so large a quantity of fluid, and the expense incurred, it made not one iota of the difference whether the faecal matter was or was not admitted. Dr. Smith had just said, suppose you take the smallest quantity of small-pox virus, what disastrous effects might it not produce if introduced, &c., &c.? Now, in reply to this, he (Mr. Clark) would only say, suppose you don't take it, what then? The drainage system could only convey whatever is put into it, it had no power of selection, and he (Mr. Clark) was only an agent; it had been ruled by the authorities that the night-soil should be put into the sewers, and about 35 tons was so put into it daily. If any better means of removal could be devised, then no doubt they would keep the night-soil out of the sewers, and dispose of it on the superior plan, whatever that might be, when it is discovered; but the drainage system they must have nevertheless for other and equally important purposes, as Dr. Smith himself admits. The sewers now receive the whole of the night-soil of the town, but only a small portion of the water-supply. This is, however, only a temporary arrangement. It is an improvement on the plan of throwing the matter into the river, though it is an abuse of the system of sewers, which are designed for the purpose of removing all

decomposable matter capable of being conveyed in running water before decomposition takes place, and they do remove it.

Dr. Smith also expressed his doubts about the house-drainage, which might lead to such an amount of typhoid fever as India had never known. These house-drains, he thought, had not been tried. In this, however, he was wrong. Upwards of 700 houses are connected with the system, and are in daily operation, and these houses are also entirely relieved of the night-soil by the sewers. The danger which Dr. Smith apprehended of the sewer gases entering the houses, and causing this terrible disease, is prevented by the most simple expedients, and these were explained.

Dr. McLeod has asked how the system,—*i. e.*, the storage of the filth until it is in a state of decomposition,—could be avoided.

The habits of the poorer classes of Natives are such as to render the adoption of the water-carriage system easy. The public latrines in the Southern Division, to which some thousands of persons daily resort, are now nearly all converted into water latrines, and any one can see and judge for themselves. There is an entire absence of nuisance, and the improvement is immense. From these the night-soil is discharged while it is fresh. Busteers should all be provided with similar, but small, public latrines for the use of the inhabitants.

The poorer description of the house-property when drained could be supplied with a water-closet at a cost of Rs. 30, and at any greater cost to the richer inhabitants as they might desire. He (Mr. Clark) need not, he thought, dwell any longer on Dr. Smith's first difficulty, which he said entirely referred to the non-separation of the solid excreta from the other drainage matters.

His second difficulty, he had informed them, pertained to the outfall at the Salt-water Lake. The description they had heard of this was really terrible, and the consequences likely to ensue terrible to contemplate. He (Mr. Clark) would be glad to take every gentleman present to the Salt-water Lake, that they might judge for themselves. He felt certain, after what they had just heard, their impression would be one of great surprise. Two days ago, when he (Mr. Clark) was there, upwards of a hundred men were employed in re-excavating the channel which had been filled up, and about which so much had been said. The channel has been bunded off, and was quite dry. Even this his friend had found to be wrong, though there was literally no smell, nor was there a single case of sickness among the people employed.

It was a terrible thing when a medical gentleman threatened his less-gifted fellow-creatures with pestilence in this way; and also in connection with the house-drains, to which he had just alluded. When doing so, he really ought to fix a limit to the period within which the calamity might be expected to arise, and not establish a constant state of terror and inactivity. Happily, however, the medical profession were by no means agreed on either of these points. Many held very contrary opinions, and there yet remained good reason to hope that his friend's anxiety was groundless.

Mr. Clark by no means intended to defend the plan of discharging either drainage or sewage matters into natural streams, as Dr. Smith well knew. He had, however, stated that the reclamation of the lake and utilization of the sewage had been suggested as a remedy for the evils of the system, and that its cost, eighteen lakhs of rupees, must be added to the cost of the drainage. It is a singular circumstance certainly that the lift of the pumps at Palmer's Bridge, the levels of the high-level sewer with reference to the level of the land, in fact everything which has been done, not only since Dr. Smith's Report, but previous to it, had all been arranged, so that the

utilization of the sewage, by irrigating the land, could at once be effected, and that a square mile of the lake had actually been purchased in 1865, and reclaimed for the purpose. Why it had not been so used, it was not for him to say; he really did not know; as an agent he could only do that which he was permitted to do; and if the sewage was not up to this day utilized on the land, it was no fault of his. In performance of his duties, he had urged it in 1868, but his suggestion was not attended to. There can be no doubt whatever that the utilization will prove highly profitable, as his friend well knew. There was therefore no necessity for including its cost in that of the drainage-works; that would be simply to magnify difficulties. The omission of this very necessary improvement, up to the present time, must be explained by others: all he knew was that the means of doing it were at hand, and it ought to be done. Here happily he and Dr. Smith agreed most cordially, but he nevertheless considered it wrong in his friend to proclaim all sorts of defects consequent on the present incomplete state of things, as permanent defects in the scheme when complete.

Dr. Smith had alluded to the fact that the Suburban Municipality are now actually carrying out what he had suggested in his report,—*i. e.*, they are, at a cost of Rs. 1,434 per mensem, sending the night-soil by rail to the *Piallee* river. True, but they are throwing it into the river; and it was chiefly with reference to the pollution of natural streams that his friend had addressed them at such considerable length. On this point, however, as it is admitted even by Dr. Smith himself that the drainage-works of Calcutta are so arranged as not to pollute any water-course which is or may be used as a source of domestic supply, he did not think it necessary to follow him.

Dr. Smith, it seems, now recommends what is called the dry conservancy system,—that is, the collection of the night-soil, and its removal to a distant spot for agricultural purposes, a little carbolic acid being put on the top to prevent nuisance. Is Dr. Smith aware that, the carbolic acid excepted, the plan has actually been tried in Calcutta, and on a large scale, in 1865-66?

Two road traction engines were purchased, all necessary trucks were built, inodorous tubs were made, land purchased, tramways laid down, excavations made, and the filth actually put into them, and covered up with earth. It is a fact that this was all done, and nothing was left undone to make it a success. Between Rs. 60,000 and 70,000 were expended on the attempt thus to dispose of the solid excreta of Calcutta; but the matter proved so intractable, that it would not remain buried; it insisted on coming to the surface, and finally the plan had to be abandoned. These are facts which it is well to consider. If the dry earth system might succeed, it is quite certain that this case of dry conservancy did not. The carbolic acid certainly was not used. This was probably owing to the opinion of the Health Officer, who has recently stated that it is useless when applied to such matter, and only acts by substituting one smell for another.

There is still one other point on which Dr. Smith has doubts of the drainage system,—*viz.*, the expenses which may be entailed in the removal of deposits, &c. He mentioned the Clyde at Glasgow, a city about the size of Calcutta. There all the sewage of the town is thrown into the river, from which the deposit has to be dredged at an annual cost of £8,000. He also mentioned the cost of the re-excavation of the channel in the lake which is now going on. Mr. Clark would not stop to enquire whether the £8,000 did not cover other expenses than that of removing the deposit caused by the sewers at Glasgow. Even if it were so, the two cases are not alike. At Glasgow it is a process of dredging the river, a totally different thing

from the excavation of a shallow channel, which can be laid dry for the purpose. It is probable that this expense may amount to Rs. 7,000 per annum for Calcutta; but it is undoubtedly matter containing some considerable manurial value, and will find its use on the spot, when the square mile of reclaimed area is brought under cultivation. Moreover, it is this identical matter which has annually to be excavated and carted away from the filthy open drains and ditches of Calcutta at present, and at a cost undoubtedly much greater than it can be done at the Salt-water Lake.

Dr. Smith has told you of the maggots which have made their appearance in the lake channels, where they had not been known before; and he objects to the passage in my paper where he (Mr. Clark) refers to the large amount of deposit which has passed through the pumps. The passage objected to was this:—"This large accumulation proves the power of the streams running in the sewers to keep them clean; they have done so to the present time in a most satisfactory manner; the result is precisely that which was intended." Now this is absolutely true, and it seemed to him (Mr. Clark) that the maggots prove the very facts which are adduced in the above extract.

The maggots are not produced in the sewers; they are put into them at the filth depôts, and find their way through the pumps to the Salt-water Lake within a period of three or four hours afterwards. Many native residences are not cleared of this filth for months at a time, and it is then a mass of maggots. This is their origin, and their presence in the Salt-water Lake channel is an additional proof of what was stated in the paper. If Mr. Clark had said anything, he should not have said, he trusted that he might be forgiven; the subject is one in which he is deeply interested, and apt to speak strongly when any statements are made likely to mislead those who do not understand it, or are in any way calculated to cause obstruction to the progress of the improvement, as in the present instance he feared might be, had he not trespassed somewhat on their time to make his reply. However, it was nevertheless a fact that his friend and himself agreed upon much, and differed only in a comparatively small matter.

ECONOMY AND TRADE.

1.—*Decentralization of the Finances of India: By*
R. KNIGHT, F.S.S.

(*A Review of the Government Resolution of 14th December 1870.*)

[Read on the 22nd April 1871.]

THAT the scheme for decentralizing the Finances of the country, embodied in the late Resolution of the Viceroy and Governor-General in Council, is the commencement of a great and weighty reform, I think we need entertain no doubt whatever. I believe it was loyally and honestly conceived, and that, while imperfect and tentative only, it marks the inauguration of a new system altogether, concerning the nature, necessity, and effects of which your President has done me the honor to request that I would state to you my views. The Resolution, I observe, defines the *object* of the Governor-General in Council in issuing it, and expresses at the same time a *desire* and a *hope*. The object, we are assured, is “the instruction of many peoples ‘and races in a good system of administration, as the scheme ‘will afford opportunities for the development of self-govern- ‘ment, for the strengthening municipal institutions, local ‘interest, supervision, and care necessary in the management of funds devoted to education, sanitation, medical charity, ‘and local public works.” This is the avowed *object* of the scheme—to afford opportunities for the development of self-government in the empire. The Resolution proceeds to tell us that the scheme has been conceived in the *desire* “to confine ‘the interference of the Supreme Government in the adminis- ‘tration of the Provincial Services to what is necessary for ‘the discharge of that responsibility which the Viceroy in ‘Council owes to the Queen and her responsible advisers; and ‘to what is necessary for the purpose of securing adherence (1) ‘to the financial conditions now prescribed, and (2) to the “general policy of the Government of India” (para. 25). The *hope* it expresses is that “the Resolution will be received in “the spirit in which it is promulgated, and that it will lead to

“more harmony in action and feeling between the Supreme and the Provincial Governments than has heretofore prevailed.”

It is to be regretted, I think, that any exposition of the Resolution after this was ventured upon in the Legislative Council, for the scheme has suffered by the interpretations put upon it by more than one member of the Supreme Executive. I believe there was a general disposition on the part of official men in the provinces to welcome the Resolution in “the spirit in which it was promulgated.” The Honorable Mr. Arbuthnot gave expression in the Madras Council to this feeling when he said,—“I entertain a strong conviction that the measure is “a real advance in the path of administrative and financial “reform, which there is every reason to hope will lead to further measures in the same direction, and which will confer “great advantages on the country.” The Honorable Mr. Norton, on the same occasion, said,—“it is because I regard it as “the point of the wedge that I hail the recent order. I believe “that it contains in it the seed and germs of what in due season will ripen into the best and richest fruits.” You know, however, that two interpretations have been put upon the Resolution, and that *non*-official men generally and the press have shown much distrust of the whole scheme, and an unwillingness to believe that it is inspired by anything but pure selfishness. A non-official member of the Madras Council (the Honorable Mr. Macfadyen) seems to have given expression to this feeling on the same occasion, in the following terms:—“Stripped of useless verbiage, what the Government of India says is simply:—“Here are a number of objects, the annual expenditure upon which must, from the nature of things, go on increasing; “we cannot be bothered finding funds for them any longer; “we will compromise with you. There, Madras, take 9 lakhs, “and go to local taxes for anything more you require. The “great point is, however, don’t worry us; we wash our hands “of you, and we hold you responsible if anything goes wrong; “so now be happy.”

Had the Resolution stood alone, this unfortunate impression would, I think, have died away, but it is impossible to conceal that in the course of the late debates in Council, the most curious care was taken to discredit the motives of the scheme, and to invest it with that purely selfish aspect which the popular distrust assigns to it. Certainly the tone of some of those speeches was altogether discordant with that of the Resolution. Well, but

most ungraciously, did one speaker say that "whatever might become of the hopes cherished from the scheme as to the people's advantage, sure he was with certainty free from shade of doubt that the measure was advantageous to the Imperial Budget."

An avowal was ostentatiously made by the same speaker that the Government had determined to appropriate every source of *expanding* revenue as its own, while throwing every *expanding* head of charge upon the local Executives; while he at the same time admitted that, "as regards new taxation, great caution would have to be exercised by them." "The local Governments are to have a fixed annual allotment for those branches of civil expenditure in which, from the progressive spirit of the age, the demands for increased outlay most arise. If the allotments suffice, then that is well; if they do not suffice, then the local Governments are not to apply to the Government of India for increased aid." In another of these unfortunate speeches, it was pointed out that "the Supreme Government could now say positively that its aggregate expenditure under certain heads [those which most tend to expand] would not increase. Thus, it has obtained a real power of control in place of that vexatious meddling with details by which it used to contrive to disgust every local Government in India. The charges for these branches of the civil administration have, during the last ten years, been increasing at an enormous rate, and it was certain that this process would go on. Every branch of the public revenue, without exception, has been in a most flourishing condition, but all the advantage has been swallowed up by the endless demands for increased expenditure. In regard to at least a portion of our charges, a limit has now been put upon this constant growth of expenditure."

It is very much to be regretted, I think, that these comments were ever made. They are discordant with the tone of the Resolution, and resolve it into an expression of pure selfishness, which, I am persuaded, it is not. Speech may be silver; silence is golden. The strange want of reticence shown in the debates has thrown discredit upon a Resolution which I prefer still to believe is an honest effort towards the attainment of a great reform. In spite, then, of these unfortunate speeches, I think it wiser still to regard the Resolution as an honest and unselfish attempt on the part of the Supreme Government to introduce a great reform into our finance, by divesting itself of a part of those powers and responsibilities hitherto unwisely engrossed by it.

I refuse to believe that the State was moved thereto by a mere wish to cast upon the local Governments the burden of every expanding head of charge. I prefer to believe that it was adopted in the conviction that the attempt to administer the affairs of a dozen different nations in this city is a mistake ; that whatever relief the Resolution may bring to the Finance Minister is but a happy accident ; and that the *object*, the *desire*, and the *hope* of the Governor-General in Council in issuing it are loyally and truthfully declared in the Resolution itself ; and I venture to say further that I believe we owe its adoption largely to the Viceroy himself personally.

DIFFERENT SCHEMES.

You are no doubt aware that several plans for effecting this reform have been put forward. The germ of the Government scheme seems to have been planted in the official mind nine years ago by Mr. Laing, who, in the course of his Financial Statement in 1862, pointed out the necessity of some such step. "The great branches of the expenditure," said Mr. Laing, "such as the army and national debt, are imperial, and while this is the case, the great branches of revenue must remain imperial also. But there is a wide field, both of revenue and expenditure, which is properly local, which in England is met by local rates, and which in fact must be met locally or not at all." The subject was discussed at length in the Supreme Council in 1867, at the instance, I believe, of Mr. Massey, but the appers have never been made public. The real author of the present scheme seems to be the Hon'ble Mr. Strachey, whose minute of 28th January 1868 (when he was Commissioner of Oudh), is substantially the Resolution as it now stands. Mr. Strachey's view is "that it is quite impossible for the local Governments or for the central authority to say what portion of the revenues raised under them is properly applicable to local wants. These revenues go into a common fund, and to determine how much of this fund ought to be given to one province, and how much to another, is under the present system impossible." "We require," says Mr. Strachey, "greater, not less, control of the finances. * * * The proposed new plan, instead of an annual review, makes once for all a final limitation of the aggregate of certain grants, and the internal distribution would be left to local discretion." Substantially, this is the plan adopted, and were it to be regarded as a final settlement of the question, it would be fatally defective. The statement that it is impossible

to say what portion of the revenue is properly applicable to local wants is a *petitio principii*, while the resolution to retain every existing branch of revenue, and at the same time put a final limitation upon the grants for every expanding head of charge, is more like the counsel of men who are desperate than of statesmen. I divined very early what the real character of this decentralization was, and warned the press of it eighteen months ago, at a time when they were congratulating themselves upon what they supposed to be Mr. Strachey's accession to their ranks. The Resolution is what I foresaw would be attempted, and I say it is fatally defective. It seems, however, to be in great favor in this city, as two of your leading journals give it full support. The *Friend of India* would have you believe that the plan of making grants from the Imperial Treasury is essential to the unity of the Empire; but how the unity of the Empire would be destroyed by federalizing its finances, I am unable to discern. The writer is frightened by a word. The only adequate reform open to us is a federalized system of finance. Another of your journals (the *Observer*) I am sorry to see adopting a tone which I hoped had been banished from the press. Full of the spirit of that bureaucracy which has so long tyrannized over the provinces, this journal tells you that "the only financial measures with which local Councils are qualified to deal, are bills providing machinery for what really is local taxation,—that is to say, measures enabling municipalities and other commercial bodies to raise funds to be spent under their own supervision." You will permit me to say that writing of this order is very unwise. How can the Madras Council, for instance, which is full of very able men, or the Bombay Council, with its experienced Chief, and the communities of those two cities, regard such writing as other than insolent? Upon the whole, it would seem that the decentralization scheme of the Resolution may be described as the scheme of the "Bengal Civilian" party. It does not command the assent of your non-official community, while the leading native journal of your city (the *Hindoo Patriot*) expresses views far in advance of those in which the Government scheme is conceived. "Our plan of decentralization," says the *Patriot*, "is this,—we would separate all the imperial charges from the local budgets, and exact a percentage as a sort of tribute from the local Governments for the defrayal of imperial expenditure. This percentage the local Governments should be required to make a first charge upon their respective revenues * * *, and any surplus should be applied to its own benefit."

Substantially, this is what may be called the Madras plan. "My view," says the Honorable Mr. Arbuthnot, "is that, instead of determining what sum each province is to be at liberty to expend in the provincial administration, the Supreme Government should determine what sum each province should contribute for imperial purposes, and should leave to it the remainder, whatever it may be, for provincial purposes. I cannot but regard a reform which deals only with the expenditure side of the account, as to a certain extent an incomplete reform." In accordance with these views, are those of the Honorable Mr. Macfadyen. "The day of true decentralization," he says, "will be when the Imperial Government shall say to the Local Government, your contribution to imperial objects is so much—pay it; use the rest of your income as your local wisdom dictates." Mr. Norton's plan seems to be the same:—"A scheme in which imperial charges should be accurately defined, under which the contribution which each presidency should make to imperial revenues to carry out and maintain all imperial objects which concern the whole Empire, such as the Army, Post Office, Guaranteed Interest, and the like, should from time to time be fixed by the Supreme Government, and that after the deduction, each presidency should have the entire management and expenditure of all the rest of its revenues,—subject, of course, to the final control of the Supreme Government. * * * Instead of saying, 'I will give you so much. and take all the rest,' the language of a sound decentralization should be, 'give me so much, and keep all the rest.'" This plan is an immense advance upon that of the Resolution, and seems to express the views of the non-official community of India generally. The Bombay journals have expressed much dissatisfaction with the Resolution, but put forward no scheme of their own, although some of them seem to be convinced that the suggestion made by the *Indian Economist* eighteen months ago is the right one. I do not think, then, that the Imperial Treasury should, as Madras proposes, be made dependent upon a system of grants or contributions from the local Government. The Imperial Government has the *right* to levy such taxes upon the country as may be necessary for the imperial expenditure. It cannot divest itself of that right. I would subject this taxation to but one condition—that it should be uniform throughout the country. The Supreme Government has the right, I say—the indefeasible right—to impose whatever taxes may be necessary for its expenditure; and I know

of one condition only by which that right is limited,—namely, that the taxes must be uniform throughout the country. I have repeatedly pointed out that we have a model of the purest form for our guidance in the American system, which has worked so successfully.

By the constitution of the United States, Congress has power—
I.—To lay and collect taxes, duties, imposts, and excises; to pay the debts, and provide for the common defence and general welfare of the United States; *but all duties, imposts, and excises shall be uniform throughout the United States.*

We have here a simple but comprehensive and exact statement of the purposes for which the Imperial Government exists at Washington, and our own here at Calcutta:—(1st) to pay the debts; and (2nd) to provide for the common defence and general (as opposed to *local*) welfare of the States. The purposes for which the Imperial Government exists being the common defence and general welfare, it follows, as a just requirement, that the taxes levied for the attainment of these purposes shall be *uniform throughout the country*. This great but simple principle should be adopted in India. Taxes that are equal in their pressure throughout the Empire are marked out by *that very fact* as imperial in their nature, and should be treated as such. Such are the import and export duties of the country; and such are, or should be, the excise duties upon opium, salt, abkarce, &c. We may federalize or decentralize our finances upon the American model I believe with ease, and with nothing but advantage to the country.

The Government Resolution plainly confounds together two distinct things,—provincial with municipal taxation. In an empire consisting of several nations, the system of taxation will naturally divide itself into three great branches. There will be (1) *Imperial* taxation for the purpose of the common defence and welfare, the equitable condition of which is that it shall be uniform throughout the empire. In the second place, there will be (2) *Provincial* taxation for purposes of local civil administration, which taxation, instead of being uniform, will be adapted in each part of the empire to the peculiar circumstances of the people. And (3) there will be the *Municipal*, or local, taxation proper to each city and township and rural district of the provinces. The municipal taxation of a city like Bombay will necessarily differ from that of a mofussil city like Poona, or a purely agricultural town like Dharwar. The provincial taxation for the civil administration of the presidency will

and differ again from both; while the imperial taxation will have no necessary connection with either. And the sooner the Imperial Government devolves upon the provinces, and the provinces upon the municipalities, their just and proper responsibilities, the sooner shall we see that self-government—desiderated by the Resolution—become a fact. The Resolution helps forward this reform in the faintest possible way, but is very valuable as an initial movement in the right direction.

PRELIMINARY STEPS.

In bringing about the reform that is really needed, the preliminary steps to be taken are to my mind very clear. What, in the first place, is that imperial expenditure of which we hear so much? In general terms, it is so much of the expenditure of the Supreme Government and of Her Majesty's Secretary of State, as is incurred for the common defence and general welfare of the empire. One of the first steps therefore towards a just decentralization would plainly be an examination of the accounts of the last ten years, to ascertain exactly what the expenditure upon these purposes has been. I indicate it roughly when I say that it comprises the interest upon the National Debt, the cost of our Military and Marine Establishments, Political Agencies, Public Works of an Imperial nature, such as our Telegraphs and great lines of Railway, the Post Office, and the Establishments of the Governor-General and of Her Majesty's Secretary of State. I believe it would be found that the strictly imperial charges amount to about £25,000,000 sterling a year. We ought not, however, to be left to impressions upon a subject so important. It would be perfectly easy by an analysis of the accounts to show exactly what the imperial expenditure really is, and that expenditure on the one hand, with the imperial revenues on the other, should form the imperial budget, the only budget dealt with by the imperial Government. As to the imperial revenues, the principle which clearly and sufficiently distinguishes them from local imposts, is the fact that they arise either (1) from the common property of the empire, or (2) from taxes that fall with uniform weight upon the provinces.

Thus, opium is plainly an imperial revenue, because it is the imperial command of the whole seaboard of India that makes the export duty possible. Customs duties again are imperial, because they fall with uniform weight upon us all; stamps the

same; salt is very nearly the same, and should be altogether so. Now, if these revenues were not sufficient to meet the imperial expenditure, and no eligible tax of uniform weight presented itself to the Supreme Council, what could be simpler than the apportionment of the deficit, whatever it was, rateably amongst the provinces? In the nature of things, the imperial Government cannot divest itself of the right to "levy taxes," or "contributions," upon the country for the purposes of the Imperial expenditure; and it is a mere question of detail whether it would be better for the Supreme Government to tax the provinces directly by additional imposts of uniform weight, for any deficit there might be, or mediately by assessing them rateably in a lump sum to the State requirements, leaving it to each local Government to decide the special taxation by which the contribution should be raised.

The *first* step towards effectual reform is, I say, the preparation of a strictly imperial balance-sheet for every year of the last decade, showing what the expenditure upon imperial account has been, and what the strictly imperial receipts. The *second* step would be the resolution of the accounts for the same period into a series of local balance-sheets, that we might know with certainty what each province has contributed during the decade to the Treasury. There would be no difficulty whatever in laying before the world an honest exposition of the state of matters. The Government Resolution is avowedly empirical in its treatment of the subject, and disclaims all *principle* in its allotments. We can therefore only look upon it as a rough attempt to make a beginning, and as such welcome it. If the work is to be done satisfactorily, we must begin by a resolution of the accounts into the imperial and local balance-sheets of which they consist. The local budgets as at present prepared are simply a snare and delusion. Thus, Bengal takes credit in *its* account for the export duty upon opium as though it were a contribution made by Bengal to the Treasury; on the other side, it is charged with the cost of the drug. The receipt and the charge are alike imperial, while, by being included in the local budget, they completely destroy its character, and deprive it of all value. Instead of serving any good purpose, these budgets, as now prepared, simply propagate delusions, and promote jealousy and strife. In the absence of exact enquiry of the nature I demand, a Bombay paper (*Times of India*) recently affirmed that "the population of Bombay contributes to the "imperial revenue *pro rata* nearly three times, and Madras

“twice the amount paid per head by the people of Bengal.” I have given much attention to this subject, and my own conviction is that an analysis of the accounts would show that the burden of the imperial expenditure is at present borne almost wholly by Madras, the North-West Provinces, and Oudh; and I have striven to conduct my enquiries with the strictest impartiality. The accounts of most of the provinces are very simple, and so far as I can make out, the Central Provinces contribute *nothing* to the Imperial Treasury, but make a heavy draft thereon year by year; Bengal almost nothing, when we bear in mind its resources and its population; and the Punjab a very small amount in comparison with what it ought to pay; while Madras, the North-West Provinces, and Oudh, between them, keep the Empire solvent. The Bombay accounts require more leisure than I have been able to give them; but I doubt whether they will be found to bear out the statements made by the Bombay journals. Owing to the exceptionally high cost of its establishments, the revenues of the presidency are more largely absorbed by local demands than its publicists suppose. I myself shared their belief for some time, but I think it is an error. The Burmah account is also exceptional, owing to the capitation tax levied therein, and the heavy export duty upon its staple trade. There would be no real difficulty, however, in dealing with either of these accounts. What I want to impress upon you is the fact that the local balance-sheets as at present prepared simply propagate delusion and error; and that the first step towards just and honest decentralization, and an equitable adjustment of the imperial burden between the provinces, is the resolution of the accounts of the last ten years into a series of imperial and local balance-sheets, when the amount contributed by each province would be authoritatively declared. I cannot but think that there is some dishonesty in the perpetuation of the present system. There is a misgiving, I greatly fear, that Bengal would not show well in the series; and it is certain that it will not. But what then? The just thing is the strong thing, and it alone. Every unjust thing in this world must take the fate that God has appointed it; and what sort of Government is that which deliberately sets itself to maintain the *unjust* thing until the public indignation becomes too strong for it!

RESPONSE OF THE PROVINCES.

The loyalty with which the Resolution has been responded to is, I think, very striking. Hardly was the scheme promulgated

than the three most heavily-weighted provinces of the Empire stated their willingness to bear the new burdens devolved upon them. I am not sure that this honorable readiness on the part of Madras, the North-West Provinces, and Oudh is not a mistake. At all events, I am satisfied that were a re-adjustment of the State burdens fairly made, these provinces, instead of having to impose fresh taxes upon their people, would find their treasuries overflowing with means for local works of improvement, and for education. Some may think it imprudent to speak thus; I do not think so. Let us know once for all that it is the *just* thing alone that is the really strong thing in this world—the thing that can endure. I honor the Governments of Madras, and of Oudh, and of the North-West for their loyalty in promptly devising cesses and license fees to supplement the grants assigned to them by the Resolution; but it might have been better for us all had they shown less readiness to do so, and a somewhat marked resolution to have the question of their just and proper liability to the imperial Exchequer ascertained beforehand. Had they refused to impose new taxes upon their territories, not in a spirit of contumacy, but of just resistance to what is wrong, they might have forced a consideration of the *principle* involved in the Resolution upon the Government. I am convinced that these new cesses in Madras, Oudh, and the North-West are in every case wrong and unjust, because these territories under the present system are already being made to pay into the Imperial Treasury vast sums of money that ought not to go beyond the local one. Even if I am altogether wrong, whose fault is it? I have striven to be right, and it is the fault of the State that there is any uncertainty in the matter. With Bombay the issue is more doubtful, and its balance-sheet would require more careful treatment than I could possibly give it in this paper.

In the case of these Lower Provinces, however, I have no doubt whatever. The delusion of the native journals of this city, that Bengal is “the milch-cow of the empire,” is profound. It is here, if anywhere, that special local taxation is an absolute necessity; here, where of all other places a demand is set up for immunity from all taxes whatever. In coming to a consideration of the cesses proposed to be levied here, I have a remark or two to make upon the subject of the Cornwallis Settlement which the zemindars are accustomed to plead in bar of their liability to taxation. I have no doubt whatever of the honesty, the good faith, with which the plea is put forward. When we remember that the construction which they put upon the settlement is

upheld by statesmen of eminence, and by great legal authorities, it is impossible to question the good faith of these gentlemen, or to blame them for the persistence or the passion with which they urge their case; and yet I have no more doubt of their error than of my existence, because I see clearly its sources and foundation. I have earnestly therefore to solicit the attention of the zemindars present, to a consideration which, when once clearly understood, cuts up by the roots every argument put forward in defence of their claim. I have never yet seen, then, an argument in its defence that did not rest upon a total misconception of the *nature* of the settlement. I appeal to the zemindars present, whether I do not describe the settlement correctly when I say that on the part of the State it was a *sale* of certain property of which the State was owner, and on the part of the zemindar a *purchase* of that property; the price being a perpetual annuity secured by a first lien on the property. Is this, or is it not, a true description of the transaction? Now the error which underlies every argument in defence of the claim to immunity from taxation arises from forgetfulness of this fact. The zemindar and all his authorities fall into one and the same mistake. The settlement, instead of being a mere sale and purchase of certain State *property*, is supposed by them to have been a commutation for all time of the State claim for *taxes*. The consideration, in their eyes, for this perpetual annuity, was perpetual immunity from taxation. On the other hand, I affirm that it is as clear as the sun at noonday that the consideration for the annuity was the State rights in the land. The perpetual annuity is the price which the zemindar agreed to pay for the transfer to himself of the State property in the soil. It is not necessary to determine what the exact nature of the property was that was sold and transferred; it is simply necessary to fasten your attention upon the fact that this was the true nature of the transaction. I doubt if there is any zemindar in this room who will venture to deny the accuracy of this account of the distinctive nature of the settlement. It was a sale and purchase of a certain property.*

* It is at the same time a matter of great importance that the exact nature of the property should be ascertained. It is a reproach to the Supreme Government that it was not long since ascertained beyond doubt. My own conviction is that the State sold to the zemindar simply the *khiranj* upon the soil. It will be allowed that Lord Cornwallis *could* not sell to the zemindar more than belonged to the State, and an authoritative declaration ought long since to have been made of the nature, extent, and limits of the property which the State sold, and which the zemindar bought, and now enjoys.

The perpetual annuity paid by the zemindars is not paid in commutation of their liability to taxes, but is the stipulated price they pay for the transfer to themselves of the State property in the soil. The distinction is vital; the zemindar claims to be the landlord of Bengal. Well, nothing is more certain than that he was not so a hundred years ago. When and how, then, did he acquire the landlord right? You know the answer as well as I do. You bought the landlordship, or all that the State *could* sell of it, in 1793; and the price you gave for it was that perpetual annuity you are now paying. But because the *rental* was commuted with you for all time, and because by a mere accident that rental happened to stand the State in the room of *taxes*, you think that you bought not merely the rental which we allow, but an immunity from *taxes* which we say is preposterous. If it be so, you are entitled not only to exemption from the income tax, but it is a violation of the settlement to subject your class to the salt duty, or to customs duty, stamp duty, or any other impost whatever. You have the right to claim that your goods should pass through the Custom House free, that your salt should pay no excise, and your legal acts no fees; that the rental which you bought happened to serve the State in the room of *taxes*, has invested the settlement in your eyes with the aspect of a commutation of the right to *tax* you. The more extensive and absolute the rights which you claim in the soil, the more manifest does the nature of the transaction become. The settlement made you the owners of a property which belonged neither to you nor to your fathers, but to the State; and the price you paid for it is that perpetual annuity which you so strangely regard as a price paid for perpetual immunity from taxation. What, then, did you pay for the land? To establish your claim, you must show that the annuity which you are paying is the price of two distinct purchases contemplated and made: (1) Those landlord rights which you declare to be so absolute, and which with greater or less modification we allow; and (2) a perpetual exemption from all taxes.

Stated in this naked form, you must yourselves see the absurdity of the claim. Suppose, for a moment that the settlement really was designed to give you this immunity, you will allow that it is a matter of plain obligation to put you to the proof of the fact. Well, the law courts are open to you, with a final appeal to the Privy Council. Why, then, do you not sue the Government for recovery of the income tax, the salt duties, the customs duties, the stamp fees, which it is wring-

ing from you in violation of your immunity? If *your* account of the settlement be the true one, it will be within the four corners of the bond, and you cannot yourselves hold that, in a matter of such importance, the mere inferences which you draw from doubtful expressions in the Regulations would justify the Government in countenancing the claim which you advance. Your claim is bad in law, gentlemen, and bad in equity, and, however honestly put forward, proceeds upon a plain misconception of what the settlement really was. It was a mere sale and purchase of property. Not one rupee of that annuity which you are paying is taxation. Your error is that you think you are paying a heavy *tax* every year; and your friends all make the same mistake. They one and all look upon the four millions a year of the annuity as your contribution to the *taxes*. There is not one rupee of *taxes* in that payment, and never was. Lord Cornwallis unwisely sold to you a property, which is to-day yielding you £20,000,000 a year, while the stipulated annuity which you are paying out of the £20,000,000 you persuade yourselves is your contribution to the *taxes*. Because it is a contribution to the *Treasury*, you think it is a contribution to the *taxes*. Not one sixpence of it is a contribution to *taxes*. It represents simply State property, *my* property just as much as yours, and it is as much a contribution made by *me* to the *taxes* as by *you*. Some of you of late years have begun to get an inkling of this fact, some insight into it, and simply claim that no *special* tax shall be laid upon you. You are willing to pay taxes in common with others, but you object to being singled out as specially liable thereto; and yet nothing is more certain than that equity, and reason and sound economy, all declare you to be liable to *special* taxation. You know as well as I do that of late years the conviction of all men who make political subjects their study has tended towards the conclusion that the *land everywhere* is the first and most proper source of the public revenue. Now your peculiar position is this—that you owe your wealth to a comparatively recent Act of the Legislature, and that you have been made wealthy at the expense of the Commonwealth. The well-meaning and benevolent act of Lord Cornwallis is now held by almost every student to have been a profound economic error to which the innumerable evils that now afflict these provinces are directly traceable; but that error made your fortunes. Now, if it be a scientific truth that the *land everywhere* is the first and most legitimate subject of taxation—even in countries where it has been private property for a thousand years—what, I ask, must

it be in your case? For you are not a body of ancient freeholders around whose property a prescriptive hedge has grown, venerable for its age, and rooted in the regard and prejudices of the people; you are but of yesterday. Many of you bought your rights at auction but a few years back; and it is *you* of all other land-owning classes who set up these pretensions—pretensions unheard of in any part of the world but here. I am bound to avow my conviction in your presence that there is no class of men in the world so justly obnoxious to special taxation, *considering all the circumstances of the case*, as the land-owning classes of these provinces. It would be an injustice to myself, and not complimentary to you, to apologize for this emphatic statement of my convictions. I have not the slightest prejudice against the zemindar, but I have an overwhelming sense of the evils which have sprung from the creation of the class, and I protest with my whole might against the attempt in these provinces to invest it with rights founded neither in the settlement itself, nor in equity, nor, allow me to add, in common sense. The proposal to levy a cess upon you for education and for roads is founded in justice, and must be upheld. I observe that one of your local newspapers advises the British Indian Association that they should narrow their petition to Parliament against the cess to one issue, and to that alone,—namely, “whether the terms of the permanent settlement admit of the imposition of an additional tax on the perpetually settled estates, either for local or imperial purposes?” ‘All other questions,’ says the writer, ‘which involve the consideration of the policy of the permanent settlement, and its merits as an economic, social, and political measure, and its practical working, are quite beside the purpose.’”

But what need is there of petitioning Parliament at all? Why does not one of your body, who has been required to pay the income tax, sue Government for the amount in the High Court? If the tax violates in any way the Regulations of 1793, you have only to prove the fact to the satisfaction of the Court, to recover a verdict against the State. Parliament will not look at your petition while you neglect the constitutional means of redress provided for you in the courts of law. The answer, the only possible answer, of Parliament to your petition will be,—“you complain that the law is being violated by the State, which proceeds, you say, on an erroneous interpretation of the settlement. But Her Majesty’s judges are the authority to whom it belongs to interpret the

“law. Go to them! Parliament can *make* laws, but to the “judges only does it belong to say what they mean.” If you want the settlement *changed*, then you may properly appeal to Parliament; if you merely want it to be interpreted authoritatively, then you must go to the law courts. Parliament cannot help you; it can annul the perpetual settlement, and decree a new one in its room; but Parliament cannot *interpret* the Cornwallis settlement, even were it disposed to do so. I appeal to the zemindars present, some of whom are, I believe, lawyers, to say whether I am not right in this advice. How preposterous is it to be ever airing a grievance in public, with sentimental and passionate exclamations that you are wronged, when the constitution supplies you with a power of compelling the State to withdraw its hand, if that hand is really oppressing you! What can be more absurd than the piling up a heap of minutes, a whole mountain of controversy, as to the meaning of a certain law, when the judges are its authorized interpreters. All the minutes of the Council in Calcutta, and of the members of that Council of *Ancients* at home, do not help you in the least; they are mere expressions of opinion. The judges will declare the law if you ask them; and when the highest court of appeal has spoken, the judgment is final, and must be obeyed.

If this appeal to the zemindars present is a digression from my subject, I trust the Association will pardon it, and allow the importance of the subject which has drawn me aside to be my apology. I am afraid, however, that I am asking pardon only to digress a second time upon another subject of equal moment to the country, and upon which the Government scheme is altogether silent—I mean the borrowing money for Public Works.

INDIA MUST NOT BORROW.

As rulers, we are too ready to forget that men can never be free, unless they are educated to freedom, and that this is not the “education which is to be found in schools, or gained from books, “but that which consists in self-discipline, in self-reliance, “and self-government. In England these are matters of hereditary descent—traditional habits which we imbibe in our “youth, and which regulate us in the conduct of life.” Here, on the other hand, everything is made a government monopoly. What Mr. Buckle affirmed some years ago of ancient France, *mutatis mutandis*, may be applied word for word to India. We cannot cut a canal, or lay down a railroad, without appealing to the Supreme Government for aid. The Supreme Executive is the great

centre from which everything radiates, and in which all functions are absorbed. All improvements of any importance, all schemes for bettering the material condition of the people, must receive the sanction of the Supreme Government, the local authorities not being considered equal to such arduous tasks. The exercise of independent jurisdiction is unknown; everything that is done must be done at head-quarters. The Supreme Government is believed to see everything, know everything, and provide for everything,—to control, and regulate, and direct everything,—the whole business of the State being conducted on the supposition that no province, nor city, nor township, nor district, knows its own interest, and that outside the Supreme Council of India, there is not a man in the country fit to take care of himself. Much of this was, of course, unavoidable from the circumstances under which our power has grown up; but the Government is directly chargeable with fostering tendencies which have now become traditional with us, and with giving them a development which was certainly never known under native rule. Now all this has to be undone, as the people can bear it. Lord Mayo has done a brave and wise thing in beginning the revolution, but he must go a great deal further. With provincial Governments so capable in all respects of administering the affairs of their respective territories independently of the Supreme Government altogether, it is simply monstrous to proceed as we have hitherto done. The affectation that it is necessary for the Supreme Government to exercise financial control over the Governor in Council of Bengal, or of Bombay, or of Madras, is affectation, and nothing else. The Lieutenant-Governor of the North-West demands the aid of a local Council to share with him the responsibilities which this scheme casts upon him; and if the elements of such a Council are to be found, it should be given to him at once, and simultaneously therewith should the Viceroy in Council divest himself of all further responsibility for the progress of those provinces, and devolve the entire burden upon the local Government. The purely local revenues of Bengal, Bombay, and Madras, such as the land tax, should be wholly surrendered to them, *and at the same time full permission to borrow as freely as they please for works of public improvement, upon their own provincial credit.* There is no sound reason, either in State policy or good economy, for withholding this power; while I am convinced that without it the progress of the country will remain slow and unsatisfactory to the end. The bonds of the Madras Government, of the Bombay Government,

and of the Government of Bengal, should be as well known upon the London Stock Exchange as the India Bonds of the Secretary of State, or the four per cents. of the Imperial Government. As there is plainly no intention on the part of the Home Government to assist the credit of the country with what is called an imperial guarantee, let it simply stand out of our way altogether; and instead of longer crippling the country by its selfish interference, allow us to deal directly with the English capitalist on our own credit and responsibility. The most important part of Mr. Grant Duff's recent speech in Parliament upon our finances, is that in which he speaks of this policy of borrowing money for the improvement of the land. Apostrophising those who, like myself, insist upon the wisdom and necessity of our adopting it boldly, he says:—

“We wish we could take your sanguine view, but we do not find that the increase of the general wealth of the country shows itself anything like so rapidly in the increase of our wealth as you suppose. The great source of our income is the land revenue. That land revenue is fixed, and must be fixed for long periods, and it is only very slowly and at distant intervals that we can increase it.”

But whose fault is it that the wealth of the country increases so slowly? We say it is yours, and yours only. After twenty years of agitation and oburgation, you are only just beginning to give water to the land, as part of a settled policy of improving the national estate, while you have deliberately resolved, it seems, that the country shall go without roads if it cannot make them out of taxes.

You are building your very fortifications out of loans, while India must make her roads out of taxes, although capital is so scarce in the country as to be worth 20, 30, 50, per cent. to the cultivator from whom you are taking it. You have in your wisdom given the country a system of high cost and high speed railways in advance of its wants for purely military purposes, and in the teeth of twenty years' protestations that these railways are *not* what the country requires,—namely, means of carrying cheaply to the coast the produce of the interior. Surely there never was such perversity on the part of a mere trustee. All you think of seems to be your own safety, the contingency of your own possible but most remote liability. You not merely refuse to guarantee Indian loans, but affect that it is your duty to hold back the English capitalist from advancing the funds which he is ready to give but for you. What have you to do with the matter at all? Are the capitalists of Europe unable to judge

for themselves as to the propriety of lending us the money that we want? Why do you not protect them in the same way from the *not* very remote contingency of their losing the money they invest in Greek Bonds or American Railways? What is it to *you* if the English capitalist choose to invest his money in this field rather than in that? A more unworthy attitude was never taken up by a great Government towards a people dependent upon it.

The people of this country must have *roads*, and have them upon the cheapest terms if they are to grow prosperous. They have asked you for bread all these years, and you have given them a stone; and you now tell them to get bread at five times the price they can buy it for, if you will but stand out of their way. All that you could do to stereotype the poverty of the country you have done, by refusing to allow the capitalists of other lands to come to its help. Your railways, as you know, are military works more than anything else; and in offering *them* to the people in answer to their cry, you are offering them a stone, and not bread. During the last twenty years you have shut India completely off from all access to the capitalists of Europe, while the country is destitute of the commonest means of communication, and can make them for itself only at enormous cost; and you now reproach it with the fact that its wealth increases so slowly that you think it necessary to forbid English capitalists to assist it with their means! Whose fault is it? You are bound to adopt that policy of Mr. Laing's of which you speak so slightly. Mr. Laing said truly that "no Government in Europe, nor any private company, ever thinks of charging to current revenue such things as extraordinary public works and interest during construction on unfinished railways, &c., which in India are so charged and create a deficit." In reply, you say that, "if we could only accept it, this is an exceedingly agreeable doctrine, for it would show that there is no deficit at all." Well, what prevents your accepting it? Is it not true? Has it come to this—that so doubtful are you of your hold upon the country, that you must lower its credit, and misrepresent its balance-sheet, for fear that your capitalists will sink their money in the land in spite of you? Is it the fact that you build your *own* railways, and telegraphs, and canals, roads, and bridges, and make the drainage of your cities and estates out of taxes? And if it be not true, why blame us—the poorest of nations—for asking to be allowed to imitate your course, in meeting the first cost of such works out of capital?

Again—whose fault is it that the land revenue increases so slowly? It is not the fault of the country, but yours. You permit their State rights to be tampered with, and parted with, by a knot of doctrinaires to whom you entrust the conduct of our finances; and in spite of the clearest proof of the folly of their course, maintain them in office to carry through their ruinous work. You know well in the India Office the mistake that has been made of late years in thus tampering with the country's resources; and you now complain to the House of Commons that the land revenue increases very slowly, forgetting that it is your fault that it does so. I am sorry to have to retort thus upon a statesman of whom we hope great things for India; but it is the simple fact that Mr. Laing is the only financier we have had hitherto who understood our economic wants, and was at the same time courageous enough to insist upon the proper way of meeting them. Our duty to the people demands that we should stand out of their way. Tell the whole world by public proclamation if you like that England will not be answerable for them; and then stand out of their way, and allow the Government of India to deal directly with the English capitalist upon their own credit, just as every other Government on the earth does. The question of Public Works will never be dealt with fairly—will never be more than trifled with—while the Supreme Government attempts to do the work of the twenty different nations of which the Empire consists, and the Home Government cuts them off from all access to foreign capital for the purpose. All these pretences of the necessity of controlling what is done are pretences from beginning to end. Your control simply means obstruction and mischief. No good whatever has come of it all these years, and none ever will or can. The sooner you set completely free—just as free as are the several States of America—provinces which have a completely organized Government like those of Madras, Bengal, and Bombay, with an intelligent and powerful public opinion beside them—the sooner will you see what we all desire to see—a prosperous and progressive Empire. I believe the time has come that we should reconstitute these Governments on a broader basis, and then set them free of the old moorings altogether to conduct their own voyage in their own way to the new Atlantis. The Punjab, Oudh, the Central Provinces, and Burmah are probably not yet ripe for the change. In *their* case the first step must be the organization of a local Government upon the model, more or less, of that in these provinces. Do not run away with the notion

that there is anything wild or Utopian in what I have said. It is all solid, reasonable fact, and the sooner the Imperial Government discerns it to be so, the better for us all. It has held on by its excessive power too long already, and some haste in letting it go would better suit the condition of our times than narrow talk of *increasing* the financial control of the Imperial Government. Every step in that direction is in the nature of things a wrong one, and will necessitate two backwards.

THE CAPITAL AND THE EMPIRE.

Finally,—without forcing their development, it is essential that we recognize the tendency of things. Of what does the Queen's Empire of India consist? Does it consist simply of the provinces and presidencies under direct British rule? Or does it embrace the Native States? I think there is some cowardice in our treatment of this question. We see that it involves difficulties, and we would rather let matters drift than attempt to guide them. I cannot reconcile myself to this course; it is neither wise, nor dignified, nor safe. Why should the Supreme Government not open its eyes to what is patent to the whole country—that Her Majesty is the Imperial and Paramount head of all India, of the Native States just as truly as of the territories under our direct administration. We are bound to make this fact the basis of our action. If the Viceroy as representative of Her Majesty be not the Imperial ruler of India, what business had he in Rajpootana the other day holding a royal durbar there, and affecting the right of banishing one of the Native princes from his presence for an affront? The Empire is waiting to be organized, while we do nothing but let it drift heavenwards or hellwards, we know not which, but we hope the former. I believe the time has come when, side by side with the work of decentralization so wisely commenced, we should begin to centralize, to organize, the Empire. I would have Her Majesty the Queen form a *really* Imperial Council of India, summoning thereto representatives from every Native State in the country. From the remote South, Travancore should send its representative, as the exponent of its wishes and desires; the Nizam should be represented by two or three confidential advisers; the Gaekwar also, and the Princes of Kattiawar, the old Kingdoms of Rajpootana, with the Mahratta Chieftains, Holkar and Scindiah, should all have their representatives in this Council. I know of no “lion in the way,” except the unfortunate and, while it lasts, fatal objection that Calcutta is the seat of Government. I have not the

slightest local prejudice in saying this. They who know the dread with which a sojourn in this city is regarded throughout India, know that no really Imperial Council will ever assemble within its gates. If we are to have an Empire, we must first get a capital. We are, as the Italians were until yesterday, without a capital. You may bring European representatives from Bombay, and from Madras, and from the North-West here, but you will never bring the native gentlemen and noblemen of India to this place as Her Majesty's Court. And yet *that* is what we should aim at steadily in our whole policy. We have to build up that Empire which the old Mogul dominion faintly shadowed, but which it is reserved for us really to attain. For many reasons it is greatly to be regretted that we cannot make Delhi the capital; for notwithstanding its decayed condition, the impression is, or until lately was, prevalent all over India, that the power which has possession of Delhi is the *de jure* ruler of India. Hamilton tells us that, "under this idea, many independent States in his day had repeatedly applied to be received as subjects and tributaries of the British Government, and he complained of the refusal as a dereliction of duty on the part of that Government." He says expressly that, "for a great many years, applications of this nature were most pressingly urged by the Rajahs of Jodhpoor, Jeypoor, Bikaner, Jeysulmere, and by many other States." The statement is very striking. Had the East India Company not been a trading body in its instincts to its latest hour, it would have met these advances in the right spirit. The time is come when the Queen's Representative in India should ostensibly assume what has long since devolved upon us by the inexorable logic of events—the responsibilities and duties of the old Mogul Empire. Many of you know at a glance how much is involved in this; but the first thing of all is to get a capital. Until that is done, we can have no Empire, whatever else we have. It is simply impossible, from the physical conditions of this place, that Calcutta should ever be the capital. It will never be anything but the port of the Gangetic provinces, and the provisional residence of the Viceroy. Bye-and-bye we shall have an Indian Empire in reality, with a capital to which the gentlemen, and noblemen, and literati of the country will resort, and which they will be slow to leave as the great heart of the civilization of the land. Government should make its selection of the place, and prepare it for the reception of Her Majesty's Court, and the Imperial Departments of the State. The importance of this

part of our work in connection with the subject of decentralization seems to be all but wholly overlooked. We want statesmen, we want breadth, and comprehensiveness, and insight. We want a truly Imperial Council of India, in which the conflicting claims of the provinces, the duties, responsibilities, and rights of the Native Princes, the prerogatives of the Supreme Power, and the measures necessary for the common defence and general welfare of the Empire—not the paltry affairs of the Broach taluqdars—would be openly debated, and finally settled, with all the weight the decisions of such a Council would carry.

In view of the heavy requisitions which we are making year by year upon a province like Oudh, how plainly is it necessary there should be an Imperial Council of review. We deposed the King of Oudh on the ground of his misgovernment, and constituted ourselves rulers in his room. The act at the best was one of doubtful morality; but let us suppose that the annexation was forced upon us by our responsibility to the people as paramount power. Let it be granted, I say, that we assumed the rule of the province from an overwhelming sense of our responsibilities, and from pure good-will to its inhabitants. Was it a part of our responsibilities that suggested our drafting the accounts of the Oudh Treasury into our own Exchequer, and making the people of the province contribute to the payment of our debt? For that is what we have done from the first. Allow that we seized the reins of government in the interest of the people,—is it in their interest that we have year by year required them to pay a heavy instalment of our Home Charges and to pay contribution to our debt? I know no reason whatever why Oudh should be saddled with our debt, that does not apply equally to Mysore, to the Nizam, and the other Native States of the country; and let no one suppose that it serves no good purpose to remind ourselves of the fact. It serves the all-important purpose of keeping us in mind that the Empire is at present a chaos; and that we must steadily fix our eyes upon the work to be accomplished, and struggle towards it. We have yet to organize the Indian Empire. The work that is being done in Germany at this moment, and that was long since done successfully in the United States, has to be done *here*; and they who forget this lose sight of one-half of the great problem of decentralization with which it is inextricably mixed up.

We have to awaken a people who have been slumbering for centuries to new political life; to associate them with us in the great work of regenerating their country; to bear them with us

our course ; and insensibly to devolve upon them a larger and still larger share of our burden, until they are able to carry it alone, and the time has come that we may rightly leave them to themselves. The Government has to keep pace with the universities it has established, and to stimulate political life amongst the people by requiring them to exercise themselves in the art of self-government, in the discharge of the duties and the rights of free men. I have said that we should at once reorganize the local Governments upon a broader basis. Without interfering with the Executive Councils, leaving them just as they are, I would largely strengthen the legislative bodies. The exclusion of the Judges therefrom by the Bill of 1861 was a purely retrograde step. The doors of the Council should be thrown wide open to all the Judges of the High Court ; and it should be further strengthened by summoning thereto *ex-officio* the Chairman of the Chamber of Commerce and the President of every association or public body, such as the British India Association, the Landholders' Association, and the Trades' Association ; the Principals of the Colleges, the Revenue Commissioners of the Presidency ; and non-official representatives of both the legal and medical professions. The elements of a strong and truly representative Council already exist in all the presidencies, and should be seized with eagerness. Below this legislative body, it is very desirable that provincial assemblies, purely consultative or deliberative in character, should be formed. Thus, I would see the Governor of Bombay assemble a Mahratta Council every year in Poona during the rains, and a Guzeratee assembly of the same order in Bombay in the winter months. We want to bring the people into a habit of intelligent co-operation with us, and the practice of an intelligent criticism upon its acts. It is by primary assemblies such as these that we should strive to get great social questions such as *caste*, and the temple endowments, the indebtedness of cultivators, improvements in agriculture, and municipal self-government incessantly discussed. The mode of appointment to these assemblies is a matter of the smallest possible importance. We are apt to attach too much importance to the elective franchise. Let the assemblies simply be left free from State interference, and they will become inevitably representative, faithfully reflecting the wishes and opinions of the people, let them be appointed how they may. By means of such bodies, Government would place itself in close relation with the people, and the views and desires of each would be correctly interpreted to the other. I attach great importance to the periodical

assembly of such bodies in every province of the country. The danger of our rule is that it is too much in advance of the people. "To seek to change opinions by law is futile; reforms so effected are purely political, when it is necessary that they should be national. It is a profound error to suppose that Government can civilize the people. It may ameliorate the surface of affairs, the symptoms of society, but it can do no more." Regeneration must come from within—from an impulse in the heart of the people themselves. In giving the people knowledge, we are giving them the only real remedy for their superstition—the only real means of awakening them to political life. With it let us give them the opportunity of applying that knowledge to the circumstances and the wants of their country as discerned by themselves. Our watchword must be Municipal, Provincial, Imperial Freedom—the sole condition of progress.

DISCUSSION.

After the reading of Mr. Knight's paper, Baboo Peary Chand Mittra rose and expressed his regret at the absence of the leading members of the British Indian Association, who had been invited to attend the meeting. He stated that, though he had been a member of that Association from its formation, he, for one, always considered himself a representative of the people, and never advocated any sectional interests. He appeared now in the same capacity; and while he felt indebted to Mr. Robert Knight for his lucid exposition of the decentralization scheme, and the able manner in which he had handled the subject, there was one part in which he begged to differ with the learned writer. If the cess were levied on the zemindars only with reference to the jumma, it amounted to a violation of the Permanent Settlement. If it were levied on all classes as a general tax, it would not be open to the same objection. The Permanent Settlement was made because it appeared to be the best settlement at the time with reference to the prospective extension of agriculture and commerce, and the creation of a body of landed proprietors who would further the material improvement of the country. What the effects of the Permanent Settlement have been is a matter for enquiry—and that whether the settlement was made upon sufficient or insufficient data, or in some cases to the prejudice of right owners, or in some cases through the corruption of ministerial officers, *it was based upon a solemn pledge* as to the perpetuity of the Government revenue, and to disturb or violate this solemn pledge would be to destroy the moral prestige of the British Government. It was possible that, if the settlement were disturbed, and another settlement established, it would be more *beneficial* in a pecuniary point of view, but the great point was whether the faith of the Government should be broken for the sake of financial considerations. Baboo Peary Chand begged to be understood at the same time that it was a duty incumbent upon the zemindars to assist in the construction of roads, as well as in the promotion of primary education; and although he believed that some of the zemindars had already rendered services to that end, he would rejoice at the manifestation of a more active desire on the part of the whole body to carry out the important measures in anticipation of the wishes of the Government; and on this point the late Lieutenant-Governor so well dwelt in his reply to the deputation who waited upon him with the farewell address.

MR. BEVERLEY thought the last speaker had wandered away from the subject of the paper before the meeting. The question before the meeting was not one of the retention or abolition of the Permanent Settlement; but they were asked to aid in the solution of this great problem of decentralization, the importance of which was fully recognized if the imperial finances were to be relieved of the growing demands for purposes of local improvement. Anything on this subject which emanated from so eminent a publicist as Mr. Knight was sure to command attention, and Mr. Beverley felt sure that the meeting shared his regret that that gentleman had not been present in person to read his paper himself. He felt certain, too, that, if Mr. Knight could be induced to take up his residence on this side of India, he would soon lose that

animus against Bengal which at present seemed to pervade all his writings. In the present paper, for instance, Mr. Knight, in condemning the Resolution of the Government of India, had characterised it as a scheme of what he called the "Bengal Civilian party;" and in another passage, he spoke of it as having been framed in the interests of Bengal. But if Mr. Knight had taken the trouble to reflect, he would have remembered that, in the Government of India, as at present constituted, there was not a single Bengal Civilian, and but one among all the Secretaries. Judging from his own experience, he (Mr. Beverley) was far from thinking that the scheme had met with the entire approval of Bengal Civilians. It was generally believed that the late Lieutenant-Governor was anything but satisfied with it. It was absurd, therefore, to call it a scheme of the "Bengal Civilian party." Mr. Knight himself seemed to halt between two opinions, for he approved and condemned the Resolution almost in the same breath. For his own part, he (Mr. Beverley) believed the scheme could not be strictly attributed to any party in particular. It seemed to him to have been elaborated by a variety of hands, and in the process of manipulation to have lost whatever individuality it may once have had.

DR. CHUCKERBUTTY thought that, as many difficult and intricate points had been raised in the lecture, the discussion of the paper should be postponed. When the paper was printed and circulated among the members, they might then have a good and proper discussion on it. If they were to discuss the subject now, it would show the weakness of the Association, and the small consideration shown to the subject. He accordingly proposed that the paper be postponed for discussion till their next Quarterly Meeting.

BABOO KOONJOLOLL BANERJEE, in seconding the Resolution, said that the subject required very close application, and that too many points had been raised for thorough discussion at the close of a meeting.

The discussion was accordingly postponed to a future meeting.

3.—*Taxes in India.* By T. J. CHICHELE-PLOWDEN, C.S.

[Read on the 22nd April 1871.]

TAXATION in India, perhaps more than in any other country, has ever been a most difficult problem to solve.

This has not been manifested under British rule alone, but was equally apparent in the ancient history of the country, and in the days of the Mahomedan Emperors.

It would be foreign to the purpose of a short essay, such as this is, to enter into a history of the methods of taxation current in former times; nor is it my intention, supposing I possessed the ability, to enunciate any new schemes for raising revenue. I propose, however, to examine certain taxes which are considered by many to be eminently suitable to this country, and also to discuss other forms of taxation, which are commonly in vogue among European nations.

When the unsatisfactory condition of the Indian revenues was laid before the public, many remedies were proposed by which to mitigate the present, and avert future, financial calamities. Amongst these a proposed tax on tobacco met with considerable support. It was said that an article of such general consumption could not fail to yield a large revenue, and, viewing it in the light of a luxury, that it was a most proper subject for taxation. But I hope to be able to show that its advocates have under-estimated the utility and productiveness of such a tax. First, consider its incidence. The people who would contribute the largest portion of it are amongst the poorest in the whole world, and are already heavily mulcted in the matter of salt. An impost on tobacco would be therefore most oppressive in its operation, and would also infringe a fundamental rule of taxation—the rule of equality.

Nobody disputes that luxuries, and not necessities, should be singled out for taxation; but I contend that tobacco should be placed in the latter, rather than in the former, class. When we speak of smoking as a luxury, I think we look upon it too much from an European point of view, and we should recollect that there are people in England who call it a vice.

No such term could be applied to tobacco-smoking as in use among the people of India.

Assuming, however, that it were seriously proposed to tax tobacco, you must levy the duty either before the raw article

has left the hands of the cultivator, or you must control its sale. Effectually to guard against illicit cultivation, it would be necessary to incur such enormous expense in the way of establishments as seriously to affect the profits arising from the tax. On the other hand, if restrictions are imposed on the sale of the manufactured article, the following consequences would result. The producer, in order to recoup himself for the tax, would be obliged to enhance the price of the commodity. He could only effect this by lessening the supply, and by diverting into other channels the capital that he had hitherto employed in the production of tobacco. The immediate result therefore of the tax would be to throw out of cultivation a certain quantity of land, and to allow, for a time at all events, a certain amount of capital to lie idle. It is impossible to speak with certainty to what extent enhancement of price would affect the demand; and as the productiveness of the tax depends upon the keenness of the latter, it is equally impossible to estimate, with any degree of accuracy, what income the tax would afford. In other words, although as an untaxed article, the consumption of tobacco is universal, it is impossible to say how much its sale may be checked by the imposition of a duty. I have not yet mentioned the practical difficulties that would present themselves in matters of detail; thus, the number of the excise staff would require considerable additions, the expense of which would largely diminish the productiveness of the tax; the rate of duty would require a nice adjustment, so that it should neither be so high as to encourage smuggling, nor so low as not to be worth the trouble of collecting. A high duty apart, it is probable that illicit sales of tobacco would be not uncommon. We all know what this would mean: Corruption in the excise department, demoralization in every village in India, and general increase of crime.

There yet remains to be urged a still more fatal objection than any of the foregoing. Whatever gain might accrue to the public revenue from a tax on tobacco, would be equally and more simply obtained by an increase of the tax on salt. The people who would suffer by this increase are, generally speaking, the same as those who would contribute to the tax on tobacco. A numerous establishment, which it would be unnecessary to increase, already exists for the surveillance of the salt duties, and hence there would result a saving of the whole expense of collection, so that none of the increase would be diverted from the public treasury.

I do not wish it to be supposed that I am advocating an increase of the duty on salt. I am well aware that, in many places, and in Bengal particularly, the tax on that commodity is at its highest, but my argument is that, in spite of this, it is more economical to increase the duty on salt, than to levy a new tax on tobacco. I have no doubt that the true policy in the matter of salt is to equalize the duty all over India, and eventually abolish the inland customs department, with its 16,000 employés. This, however, is a work of time, and can only be effected by an increase of the production of the article.

My remarks on tobacco and salt naturally lead me to consider excise duties generally. I believe that, for local purposes, excise might be brought to yield a much large revenue than it does at present. I should propose to effect this rather by an increased economy of administration, than by greatly adding to the duties already imposed.

Opium, gunja, taree, country and imported spirits,—these are the main articles subject to excise duty. Opium is managed by a separate department. Gunja is principally under the charge of the Magistrate of Rajshahye, while taree and country spirits are controlled by a Deputy Collector in each district. I suggest a general excise department, for the purposes of which, I should apportion the country into circles, commensurate in size rather with the Division of the Commissioner than the District of the Magistrate. The department itself should be under the control of officers whose undivided attention should be devoted to excise matters. As affairs at present stand, the excise deputy in each district has his share of the criminal work, and not uncommonly is entrusted with the treasury besides; the result is, the duty which is most unpopular, and least likely to attract the attention of his superior officers,—*viz.*, the superintendence of excise,—meets with less attention than it deserves. The recent decentralization scheme has transferred to the Local Government nine distinct charges, and it is admitted that the sum allotted to Bengal, out of the entire revenue, is less by some £350,000 than the present cost of those same charges. I cannot help thinking that some portion of this deficiency might be supplied by better management of the excise revenue.

Another tax upon which I propose to offer a few remarks is that which is generally known as a “succession duty.” Theoretically, this tax has much to recommend it. It is based on the principle that the individual should contribute to the expenses of a Government, by the wise administration of which he obtains

the secure enjoyment of his hereditary rights. Were it not for the security afforded by a strong Government, might, rather than right, would prevail in all matters relating to property. The possessions of a deceased proprietor, so far from descending to his possibly infant children, would become the prey of his nearest and most powerful neighbour. The tax is also a most convenient one, for the payment, being taken at a time when the worldly goods of the payer have received an increase, becomes as little harassing as possible. On the other hand, there are valid objections to a succession duty. It is a corollary to the principle upon which it has been stated that this tax is based, that all succession duties should be graduated,—i. e., the more distant the heir, the higher the rate of duty to be exacted from him. In England, when a landed proprietor dies, there is not the least difficulty in ascertaining his successor; and, as a general rule, the property descends in one parcel to a single individual. It is equally easy to find out the degree of relationship existing between the deceased and his heirs; hence, in England, there is little or no difficulty in adjusting a succession duty. As regards India, the case is far otherwise. In many instances so minute is the sub-division of property, that it would be an arduous task to ascertain the interest possessed by a given individual in the estate of the person to whom he has succeeded. It would require a skilled and proportionately highly paid establishment to conduct the necessary enquiries, the result of which would be to diminish the profits arising from the tax.

Again, the tax would be a very unequal one. Take an estate which, on the death of the present incumbent, lapses to a number of sharers possessing very different interests, and connected some very nearly and others in an equally remote degree with the late proprietor. If the tax were levied according to the estimated value of the estate, either Government would suffer from the rate being too low, considering the remote degree of affinity of many of the heirs, while the nearer relations would be unjustly mulcted were the percentage raised. On the other hand, if the tax were levied from each individual, according to his interest in the property to which he had succeeded, the expense of collection, as it may be succinctly called, would seriously interfere with the productiveness of the tax. Hence I am led to the conclusion that a succession duty, though theoretically, it has much to recommend it, is, from the nature of the law regarding succession to land, unsuited to India.

The remaining impost on which I propose to remark is what is called a tax on expenditure.

The correspondence which took place on financial subjects, in the year 1859, pointed to the conclusion that, one method excepted, an income tax was the only means of raising revenue in India. The experience of 1870 will have shown that even this means cannot be relied on. An eminent writer on political economy has proposed a tax on expenditure as a substitute for that on income. Now, in India, a cess of this kind would include several of those minor and, so to speak, partial imposts, such as a tax on marriage expenses, which have lately been before the public. The principal advantages of a tax on expenditure are three in number: firstly, whether the tax be oppressive or not, depends upon the individual himself, for it is within his power to regulate his expenditure as he chooses; secondly, whereas an income tax is apt to place a man's inclination in opposition to his duty, that on expenditure will probably have an opposite effect, for there are few people who will have the courage to write themselves down as niggards; lastly, the tax is held to be a most moral one, for the people who would contribute to it are either the rich, or those ostentatious persons who desire to make a show of possessing what they really have not. In this respect the tax resembles the duty levied on armorial bearings, hair powder, and carriages; but at the same time I am at a loss to see why a tax should be moral because it chiefly falls upon the rich. The first advantage too is not strictly true, because it is only within a certain limit that a man can regulate his expenditure. Thus, a married man and a bachelor, with the same income, will almost necessarily pay very different amounts in satisfaction of the tax, and he who could least spare it would have to contribute the most. Again, the miser would be almost wholly exempt from the operation of the tax, and this most improperly, for his capital being hoarded, instead of profitably employed, represents so much loss to the country. On the whole, then, it is clear that a tax on expenditure will offend in a considerable degree against the maxim of equality.

In bringing this paper to a conclusion, I have but one observation to make. I remarked before that the correspondence of 1859 showed that, one method excepted, the only means of raising a revenue was to be found in the imposition of an income tax: that one method is now, or was lately, prominently before the public; and to it, sooner or later, recourse will most assuredly be had. Most of my hearers will have divined that I refer to a revision of the land settlement.

4.—*On Social Progress.* By MR. J. REMFRY.

[Read on the 22nd April 1871.]

IF we take a comprehensive view of the peoples now existing on the earth, and of their manners and customs, we shall not only notice a great variety in their conditions, but be convinced that they are the most civilized who have the freest intercourse with others, and that they derive thereby social advantages which are not enjoyed by those who live in an isolated and secluded condition. We shall moreover see, that as one country differs from another in its natural products, so does one people manifest maxims different from other races of the human family, and that it is only by intercourse and the interchange of kindly feeling that the good of all can be secured. It is only by the advancement of knowledge, wisdom, and understanding that truth and righteousness can be established.

In our *natural* condition we are constituted social beings :—

“God working ever on a social plan,
By various ties attaches man to man ;
He made at first, though free and unconfined,
One man the common father of the kind ;
That every tribe, though placed as he sees best,
Where seas or deserts part them from the rest,
Differing in language, manners, or in face,
Might feel themselves allied to all the race.”

It was not good for our first parent to be alone, neither would it be good for any of our fellow mortals to have none others of our nature to associate with. Families are reared, and villages, towns, and cities are constituted, that society should be formed, and that mankind should live in harmony and peace together.

It has been stated that society “must pass through certain transitional phases before it can obtain a permanent fixed constitution.” This has been the case in England. The changes wrought in times past, and which are yet being effected by the commingling of divers views and feelings, have so wrought on society there as to raise it to the highest state of civilization. Macaulay, in his History of England, says, “nothing in the early existence of Britain indicated the greatness which she was destined to attain. Her inhabitants, when first they became known to the Syrian mariners, were little superior to the natives of the Sandwich Islands.” But “the conversion of the Anglo-Saxons to Christianity was the first of a long series of salutary

revolutions. Britain, after a succession of changes, re-appears as England," and literature, science, and art have prospered ever since. "It is remarkable," says the historian, "that the two greatest and most salutary social revolutions which have taken place in England,—that revolution which in the thirteenth century put an end to the tyranny of nation over nation,—and that revolution which in a few generations later put an end to the property of man in man, were silently and imperceptibly effected." "Moral causes noiselessly effaced first the distinction between Norman and Saxon, and then the distinction between master and slave." And is not a similar process to this going on now in India? Caste feeling and prejudices, are they not giving way before enlightened and civilizing influences? And are not the sons and daughters of this mighty empire rising to freedom in all social advantages? May we not expect that the same kind of social progress which has raised England to the highest civilization—the same processes which have at last induced the English Government to enjoin that every child in that country shall be educated, shall soon obtain for the enlightenment of the rising race of India?

Education has effected, and is still bringing about, mighty changes in this land. Old barriers to intellectual and moral progress have been removed. Light has come from the West, and by the rapid communication thereof the people are rising to all social and beneficial exercises. Do we not see in the future a bright era for India—a time coming when her sons and daughters shall have acquired knowledge and intelligence; when rising generations, trained by educated mothers, shall grow up to be useful members of the State under which it may be their happiness to live; when they shall be freed from the prejudices of caste, and from those home influences which limited the sphere of intelligent action in past generations? We see this already in some measure accomplished in the means used for imparting knowledge—in the establishing schools and promotion of literary societies, and in the endowment of Universities by which the youths of India are being qualified for honorable positions under Government. We see it in the earnestness also evinced for the education of India's daughters, who, trained to virtue, are being led to occupy their proper position in society, and to become intelligent guides of household duties. But in order to educate the masses of the people, there must be a commencement at the lowest grade, and then a gradual enlightenment of the intellectual and moral powers. As in nature, there

is a seed-sowing time, so in order that growth in knowledge and understanding may be promoted, there must be the early implantation of right principles, and then the training to all useful purposes.

Social progress is now seen in the enlightened views expressed by the educated Natives of India, who living under a paternal and beneficent rule, are now becoming a more united people in all kindly intercourse. Do we not express our sentiments with them more freely, and by interchange of views in conversation, and in the advocacy of right principles, are we not promoting each other's welfare? Do not all classes now associate, and are not the bonds of charity and good will extended on every hand?

In this light, social progress is a continuous going forward in all goodness of conception, design, and exercise. It is the moving principle of action in improved and still improving society. It has no degenerating nature, but gives a stimulus to every noble thought, and to aspirations of intellectual and moral feeling. It is promotive of union in the pursuit of truth and in development of kindness and charity. In instructing the ignorant, in obtaining, classifying and appropriating to useful purposes information of every kind, it has a special mission.

The definition of "sociology," then I take to be what was so well described by Dr. Ewart in his opening address of the present Session, and which was so nicely approved of by His Excellency the Viceroy, in his proposal of a vote of thanks for the same,—a science calculated to benefit society in every possible way,—a science combining principles of goodness, calculated to elevate society and confer lasting benefit on its members;—in a word, a science beneficial in its range of all philanthropic, scientific, moral, and intellectual tendencies. To aid its progress, therefore, must be the duty of all well-wishers of India, and of all who desire the extension of noble principles of action throughout the world.

As a prominent principle, implanted in our nature by the Author of our existence, the "desire of society" commends itself to our earnest attention; and this desire, stimulated to goodness in thought, word, and deed, has been considered by most writers on the subject as manifesting itself at all periods of life and in all conditions of civilization. "It is found in the union of men in civil society and social intercourse, in the ties of friendships, and the still closer union of the domestic circle." And, if our affections are guided aright in our intercourse with

our fellow creatures, we shall do nothing but what is calculated to promote their good, and to bring lasting benefits to ourselves. If our desires are rightly applied, and self-love kept within proper bounds, we shall in conversation and in deportment be influential for good in all the circles of society in which it may be our province to move.

In conclusion, there is nothing in social life so influential for good as "charity," for this "is the great test of the moral condition," and is the binding principle to right action. It is promotive of peace and harmony, and is a well-spring of happiness to its recipients, stimulating them in the pursuit of all social goodness. If nations, instead of practising the arts of war in strife, hatred and jealousies, would but cultivate this "bond of peace," and exert all their civilizing processes for the good of mankind at large in all *social* greatness, then would the arts and the sciences more abundantly flourish, knowledge would be increased, and virtue and truth would be more extensively established,—"the earth would yield her increase, and God, even our own God, would bless us." With this principle paramount there would be "more abundant glories mingled with perpetual peace."

5.—*On the Decentralization of the Finances.*

BY MR. T. J. C. GRANT, c.s.

IT is now some four months since the Financial Resolution of December 1870 was promulgated; and people (even those who have never previously exercised their minds upon the subject) have had plenty of time to form an opinion on the great question of decentralizing the finances. I cannot hide my very great surprise at the reception which this most important measure has met with at the hands of the English public of India. It has met with much hostile criticism from some of the best and most liberal of our papers. Some prints have gone so deplorably far as to receive it with taunts and sneers, with accusations against Government of the grossest bad faith, and imputations of the most degraded cowardice. Other papers regard the measure favourably, but in my humble opinion, even the praise awarded in these shows that the real significance and value of this act of the Government has been missed, and that the courage and foresight which have been evinced in it have not been fairly appreciated. In short, whilst the scheme of decentralization has provoked some unworthy sneers and unjustifiable imputations, it has received at the best but cold and too faint praise.

If the public prints faithfully represent public opinion in this matter, I fear that, even those who regard the decentralization scheme favourably, will be ready to accuse me of using exaggerated and unconsidered language in expressing my views upon this subject. In my humble opinion the much abused Government of Lord Mayo has taken a step far in advance of those of its critics who are most advanced, and that, if this measure does not receive its meed of gratitude, it is because the Government has boldly stridden right beyond the view of those who accuse it of weakness and short-sightedness. I must venture to declare my opinion that the order of Government, which gave its death-blow to the system of rule by centralization, is, with one exception, the most socially important of all the edicts that have been promulgated in India.

To show that my words are at least not unconsidered, I may tell you that, while I express this opinion, I bear in mind the laws which gave to non-official Englishmen free access to come to India, to stay there, or to leave it, just as they might choose; which permitted them to hold lands in their own names, and gave them secure titles thereto; which threw open the services to competition as much for Natives of India as for Englishmen; and which have at last broken in upon the monopoly of a class, and allowed non-official men to take their places among the rulers of the country. The one enactment which I except as more important still, is that which gave freedom of the press to India.

I will now endeavour to show that my language is also not exaggerated; but it must be understood that I do not apply it to the mere scope and wording of the December Resolution. I look not so much to this order by itself, as to the consequences which I believe must inevitably follow from it. I am concerned with the great general principle which this Resolution announces, and not with the mere details of its mechanical application. The method of applying the principle is matter for separate consideration, and does not come within my present subject. I will concede, if you like, that there is much to object to in the practical details of the order, and that the principle confessed has not been applied nearly so deeply as it might be now, or as it must be hereafter. I do believe that, in another decade, we shall have carried the principle so much farther, that this present edict will then appear feeble and insufficient. But the guiding principle we have even now before us, whole and entire, and its results must surely follow. The outlined shadow of his mistress, which the Greek lover traced upon the wall, was poor and inartistic, but it was the origin of painting. The first printing press was slow, expensive, and rude in its results, but it was the mother of modern liberty and enlightenment. And I speak as I do of the order which announces the new Financial Scheme, because I believe it ushers in an entirely new system of civil polity in India—a new system which shall quicken the land, and arouse the dwellers in it to that sense of political existence (with all its large and ennobling duties), which the Natives of India have never yet known, and which even we Englishmen seem to have forgotten out here.

I deal, then, only with such portions of the December Resolution as declare the principle that governs it,—that is to say, with such portions of it as contain the confession, that the centralized

system of administration has failed; that the system has not been carried with it the knowledge necessary for success, nor if it had the knowledge, the power; and that it has, therefore, become necessary to enter upon decentralization, by partially transferring the important power of the purse to the Local Governments, for local purposes.

This important decision is, I hope, the final one in the great controversy between the rival systems of centralization and decentralization. To my mind, the most curious point in the whole of that long continued controversy is its long continuance. Theoretically, it has long been difficult for the advocates of centralization to make out such a case for it as would bear the light that modern thought has thrown upon political science. Practically, it has been working worse and worse, and yet worse, every year of its existence in this country; moreover, while our experience here has been most adverse to it, the history (even the startling contemporary history) of other nations has been placing the evils of it in the broadest light.

And yet we, in India, have clung to it, with a pertinacity that it is not very easy to account for. It is partly, I think, because we are a nation that does not dare to make the true use of history; that cannot bring ourselves to believe in history as a science, and to apply its laws as we do those of other sciences. Partly also, I think, because we are (for reasons not creditable to a self-governing people) more ignorantly timid of changes than any nation of the world. But chiefly, as I believe, because of the embarrassing position (I had almost said the false position) in which we free Englishmen find ourselves placed as the foreign rulers of this great Empire.

I think that I may safely lay down the broad and general proposition that it is not possible to carry on Government by centralization, in the case of a free people popularly governed;—in the case where the procession of power is from the people to the rulers. This seems to me to be scarcely more than a self-evident truism. It might, indeed, be possible with a free people if they are so small in number, so poor, and so homogeneous in character and religion, as to be still fit subjects for the primitive and patriarchal form of Government. This is such an exception as we can afford to ignore wholly. But the further that a people advances beyond the primitive stage of civilization, the more impossible does it become for them to submit to centralization. Civilization has a tendency to introduce multitudinous diversities among a people. Centralization has a

tendency, as unailing, to introduce strict uniformity into a Government; and from this contrary motion of the rulers and the people, there, sooner or later, is brought about a state of things that makes the Procrustean rule of a Central Government a matter not to be borne, save under absolute compulsion. In all Empires, even when they are not strikingly large and populous, there are international jealousies and rivalries to be regarded, religious differences and animosities to be allowed for, local prejudices and customs to be taken into account, conflicting class interests to be noticed, and extreme local variations of intellectual and material advancement to be considered. But a Central Government can never be in a position to know or to understand these local diversities: can never be in a position to legislate with sufficient intelligence and minuteness for them all. It cannot escape from its tendency to mischievous uniformity, and it is plain that, in attempting to measure all things by a too unvarying standard, it must give such grave offence to all its subjects in turn, that it will at last be able to maintain itself against an unfriendly people, only if it commands sufficient physical force to do so.

And the danger to a centralized Government is not only of this external kind, it carries its own ruin in itself. It may avoid in a large measure (certainly not altogether) the suicidal faults and vices of a despotism, but it cannot avoid faults as surely fatal. It is absurd—nothing less than absurd—for any Government to attempt to do all the work of Government unaided, or even to reserve the greater portion of it for itself. If a nation is to prosper, the people *must* be joined with their rulers in the task of governing themselves, and must have the largest share of the work. There are certain broad matters and questions, which we in India call imperial, that are best managed by the nation through its appointed rulers. There are other matters more local, but not less important as connected with the developing of a nation, which the people can only do for themselves, and which, if the rulers exclude the people from doing them, are either not done at all, or are done intolerably ill. The spectacle of a Central Government persisting in going beyond its natural tether, is one that has been frequently exhibited to the world, and the same ruinous result attends them all. When a Government thrusts aside the people, and interferes unnaturally in local matters, without being in a position to understand fully local requirements, without the knowledge necessary for the successful development of local resources, without so much

as knowing the special wants of each province, nor its means for supplying them, the final results of that Government are not difficult to be foreseen. It is not only that the Government will both irritate and disgust the people, it is not only that it will also be in conflict with its own local agents on matters which the agents understand best, but it will fall into such grievous financial difficulties, that it will find its action crippled and hampered, more and more, day by day, in every direction, till at last it will become difficult to carry on any function of Government at all.

I will venture to take the English empire in India, as illustrating the position I have taken. Our Government is most assuredly not such as is meant when we talk of a popular Government. The rulers do not derive any of their authority from the people, are not responsible to them, and do not admit them to any partnership in the work of Government. And lastly, the Government has been, till now, essentially centralized. It is not surprising that, *at first*, Englishmen, who would have died to maintain the free institutions of their own land, followed a totally different system in India. We got our empire by the sword, and when we stood, with the sword yet in our hands, we were compelled to rule by centralization, because we could only trust the few who were for us, were compelled to exclude the people from power, because we could not trust the many who were against us. Unfortunately too, we made a disgracefully bad start as rulers. Instead of at once setting to work to assuage and remove the natural evils of conquest, the early English in India aggravated and added to them. By their sordid corruption and selfish dishonesty, they left to their successors such an evil legacy of hatred and mistrust, that, even when the uninterruptedly honest Government, which has obtained ever since, first began, there existed greater necessity than ever for still excluding the people from power and for still ruling by centralization. But it is surprising that, from the days of Lord Cornwallis downwards, till the last days of the year 1870, that same despotic form of Government has been maintained with no material alteration as the proper and necessary form for India. I believe that the propriety of, and necessity for, centralization had both ceased long before; that the maintaining it so long has wrought absolutely enormous injury; and that we owe very much to Lord Mayo's Government for having taken the first step towards remedying those injuries by the decentralization scheme of December 1870.

A Governor-General, and four or five Councillors, some half a dozen gentlemen in all, have always undertaken the responsibility of governing the whole of the Indian empire. So they did when we held nothing of India to the west of Patna; so they have continued to do till now, when the empire stretches from the Himalayas to Comorin. It is true that, as the empire grew and was enlarged, and as the demands on the energy of the small Central Government increased more and more, they gradually called in others to their aid, and Legislative Councils and Provincial Governments sprung up. But these were not allowed to take off one jot from the completeness of the centralization. The Supreme Government called in help in the mechanical work of administering and legislating, but lost no portion of its control in either department. The Provincial Governors were watched with almost jealous strictness, in every act of administration—nor could any legislative enactment become law till it had been submitted for the assent of the central authority.

And that central authority took care that its own power should be real and actual, and that the power of its Lieutenants should *not* be real, for the Supreme Government kept the control of the finances singly, wholly, and exclusively in its own hands. It was not only that the Local Governments could raise no revenue whatever for themselves—they could not even spend as they liked the money that was given to them. That money was apportioned out to them in fixed sums for specified purposes, and both the amounts and the purposes were decided absolutely by the Supreme Government alone. The Local Governments could suggest and recommend and argue upon their recommendations, but the Supreme Government could always decide against them; and in practice did so over and over, and over again, even upon matters which to the Local Governments seemed simply vital. We call them Local Governments, but I need not remind this meeting that there cannot be any Government in the proper meaning of the term, where there is no control over finances—no power of the purse. Till now there has been but *one* Government in India—that central power which could, and did, control all the administration of its subordinates, which could veto any of their legislative enactments, and which retained in its own hands the absolute and undivided power of the purse. This closely central method of Government has been at length infringed upon, and we are now in a position to look around and see what it has done for the country,

and for the government of it, and so form a judgment upon its merits, after it has had a trial of one hundred years.

A review, such as I talk of, of our position in India, is, of course, more than I can think of attempting to undertake now. It would provide much more than enough of subject-matter, if the whole evening were devoted to the consideration of nothing else. Moreover, I find the subject by no means so alluring as to tempt me to linger on it longer than I can help, so I promise to be as brief as possible. A short time ago, I enumerated the difficulties and dangers which I believe must always attend upon strict centralization in Government. I will refer to the present condition of the country, only in so far as it illustrates my remarks, and this at no greater length than will suffice to explain them.

In the first place, then, I said that a Government which is not popular in form, but which is centralized, would be in great danger of giving grave offence to all its subjects in turn—would at once irritate and disgust them all. I ask how did the centralized Government of India stand in regard to the affection and respect of all classes of their subjects? What legacy has it left to decentralization? Wherever we look for an answer, I fear we shall get but a sad one. Let us take the English section of the public first. Here the Government is relieved of one great obstacle to success, because it is of the same nation as its subjects. Here, too, by the circumstances of the case, it might look for indulgent critics and for natural allies. But the fact is that there has been for many and many a year past nothing but quarrels between the English in India and the Government. I doubt if any man alive remembers the time when there was accord between them. There is something very pathetic in the way in which Englishmen here hail the advent of every fresh Governor in the hopes that he will bring peace at last. And in the way in which Governor after Governor leaves these shores, weary with his contests with the English, the quarrels seem to have become chronic. The unfortunate history of the late financial crisis has greatly widened the breach in our day. And whilst it has caused the English public to give way to a great access of anger against the Government, it appears but too plain that this has been attended with a serious loss of respect of each for the other.

If we take the native public, there is the same story of estrangement—a story which is here far more important and far more significant. It is the same whether you look among the

keenly intellectual and highly educated gentlemen, whose good opinion must be essentially valuable to the Government, or amongst the ignorant, credulous, and easily swayed masses, whose bad opinion no Government can afford to despise. It is not possible to shut the eyes to the disheartening fact, that there has long been a growing coolness between the English and the more thoughtful Natives. Things have come to such a pass, that there is a great, almost a total, lack of sympathy between the two classes. The ruling class, unfortunately, seems to care very little about this, and continues to solve all questions and adopt all measures, in accordance with its own one-sided views, and in utter disregard of the deep convictions and the remonstrances of the subject class. But it has become too plain to be concealed that this has raised in the minds of thoughtful men among the Natives, a deep feeling of distrust—I might even say resentment.

With the mass of the population our case is still worse. I do not believe that we have ever, at any time of our rule, so governed as to reach their confidence. It has come to be a sort of standing axiom with all who write about our rule in India that our national respect for truth has so impressed the Natives that it has become one of the most powerful engines of Government in our hands. This belief in the implicit reliance placed by Natives on the word of an Englishman is one of the most extraordinary of all the delusions with which we English flatter ourselves. How we out here contrive to delude ourselves with it, in the face of history, in the face of our daily experience, is more than I can understand. In the case of the great body of Natives it is strictly and altogether untrue. The truth is that the great body of the Natives of this country always have been, and still are, ready to believe anything, however wild and ridiculous, that tells against us, and will believe nothing, however plausible and plain, that tells in our favour. So it was in the days when Lord Cornwallis promulgated the perpetual settlement, and so we found it to be still in the days of the Mutinies. In 1857, the most solemnly pledged and impressive assurances, publicly uttered by British statesmen and accompanied by proofs of sincerity that seemed not short of demonstration—gained absolutely no belief whatever from the Natives. On the other hand, the wildest and most palpable fictions—secretly uttered by men of no responsibility or character—and which charged the Government with impossible crimes, at once infamous and childish, were believed in with the

most unreserved belief, as telling of nothing which was not naturally to be expected from the English. Be the causes what they may, it cannot be doubted that the masses of India, so incredulous of good and so credulous of evil, were greatly alarmed by the late high rate of income-tax. And it was only the other day that a Lieutenant-Governor of Bengal prayed that a census might not be taken just now, because, notwithstanding the public pledge of the Government that the census did not mean further taxation, the Natives of Bengal continued to decidedly believe that it most certainly did.

Nor is it only the uneducated classes who thus strongly and genuinely believe ill of us, and who do not believe in our publicly pledged word. To my astonishment I have found well educated native lawyers (*vakeels*)—men whose life is passed in sifting facts and weighing evidence, and whose profession is a very antidote to credulity—who still vehemently express their belief that the Eastern Bengal Railway Company, after an accident on their line, *did* fling into the river waggon loads of mutilated men, while they were yet alive, merely to conceal the full extent of the calamity.

I have said that a centralized Government will estrange its subjects, because, by its very nature, it can never be "*en rapport*" with them, because it cannot hope to understand all the many varieties of prejudices, of opinions, of customs, and of circumstances which are to be found in all large Empires. It may be argued that the estrangement I have instanced is due not to centralization, but to the measure taken in the late financial crisis. To this I would answer, first, that the financial crisis itself is a product of centralization; and next, that the objection is wholly inapplicable to the case, because the financial crisis is a thing of yesterday, and the estrangement is generations old. The cause of the estrangement, of both the English and the Native section of the public, is common to both. Neither the Englishman nor the Native can patiently endure to see themselves excluded from all share in the government, even from that share which seems most to be their own. It grates harshly on them both, to be excluded from even that indirect share which is often obtained by the expression of public opinion. When people feel that they can think for themselves, they find it intolerable to have all the thinking done for them by others. It seems to me quite undeniable that the English rulers of India have all along kept the right of thinking too much to themselves. Honestly and ear-

nestly they are determined to do good to the Native, and to do it in spite of him. If the Native differs from the Government as to the method of doing himself good, his objections, though deeply felt and strongly put, are too often overruled or disregarded. It cannot but be that the Native is deeply hurt at this, and the misfortune is that the more energetic and actively zealous the Government becomes, the more does the breach with the Native widen as a consequence. Every mistake (and they are not few) that the Government has made in its efforts to do good in spite of the Natives, is remembered and brooded over. Nor is it only the larger and more important actions of the Government that give offence to the Natives—they are almost as much galled by the efforts at minute rule. They remember that the same Government which put the horrible resumption laws in force, and which unconsciously collected the revenues of Madras by torture, also wrote grave minutes on the mighty shoe question; and that the same Government which let a whole Province starve, also put on record a censure of the manners of their schoolboys.

I have said that a centralized Government will fail, at one time, for lack of local knowledge, and at another, for lack of power where it has the knowledge. One and the same Province can give a striking instance of each kind of failure. In 1866, there was a scarcity of food over a great part of Bengal, and a desolating famine in the Province of Orissa. The simple reason why that famine became so widely fatal is that Government knew nothing of the very striking and peculiar wants of that Province. It did not know that, owing to a deficient natural supply of water, the country was peculiarly liable to famine; and it did not know that, whenever famine might come, the country would be, for many months, in the position of a besieged and blockaded city, and could not be approached or supplied from the outside. This was an instance of failure from want of knowledge.

Again, it was shown, with unusual precision and distinctness, that Orissa would never be safe from famine—might be subjected to it any or every year—until it was supplied with proper irrigation works. The necessity for such works has been fully admitted and accepted by the Central Government; and yet, though so long a time has elapsed since the admission was made, the irrigation of Orissa has not progressed at all. And why? because notwithstanding the vehement urgency of the officials of Orissa, and the emphatic remonstrances of the Local Government, the central administration (with the very best intentions

in the world) is obliged to stop the work from sheer want of funds—although, during this present season, Orissa has had the narrowest escape possible from another dire famine. This is an instance of failure from want of power.

It is not necessary for me to give any instances in support of my remark that a Central Government will find itself in conflict with its own Lieutenants on local matters. It will suffice to refer to the December Resolution itself, which admits that, owing to the old pure centralization, "there have occurred conflicts of opinion injurious to the public service." Nor could any other result be possible. The Central Government held the purse, but had neither the deep, immediate interest in the welfare of the local provinces, nor the full understanding of local requirements, which were requisite for a proper use of the money. The Local Governments had the requisite immediate interest in, and understanding of, the local requirements, but had no money with which to supply them. Sometimes a province would come heavily to the ground between the two; and then both Governments would be apt to repudiate a responsibility which neither had the means of properly fulfilling.

Finally, I said that a Central Government is almost certain to break down grievously in financial matters. This also is a point on which there can be no occasion for me to say much by way of instance. The department of the finances is the one in which the centralization has been most absolute—the one over which the Supreme Government has exercised exclusive control. And what has been the result? There is the fact—a fact which conveys the very strongest condemnation possible—that, in the face of a healthy revenue, increasing not only steadily but largely, year by year, we have yet been approaching rapidly, year by year, to the very verge of national bankruptcy. Nor is this all; whilst this gigantic evil was going on, we knew nothing of its existence, and actually believed that we stood on the right side of the book. And it must be remembered that this is not a solitary instance. It has only been the latest of a long series of financial breakdowns, which have been constantly recurring, ever since we have had an Indian history. They are matters of such notoriety that Indian finance has become a bye-word. That the failures are greatly, if not altogether, attributable to close centralization, seems beyond dispute. The December Resolution of the Government means nothing if it does not admit that.

And now I have done with the major portion of my case

against Government by centralization, and have little more to say. I have stated a set of evils which I believe to be inseparable from such a system in any country. I have endeavoured to show that these evils have one and all displayed themselves in our long government of India; and I have endeavoured to illustrate the case of each of the evils I have named, by instances. To save time I have contented myself with only one illustration to each point. If I have chosen them well, they will doubtless suggest many others to you, and I think that those I have given both explain my remarks and support my views. I have selected such matters only as are plain, and unquestioned by men of all opinions, and have endeavoured, lastly, to prove that all these evil things are directly due to Government by centralization. If I have had the good fortune to carry my audience with me, they will now understand why I have expressed myself so strongly on the decentralization of the finances,—why I have not hesitated to call the December Resolution the most important of all the Indian edicts save one,—and why I claim for the Government which promulgated it a far higher degree of gratitude and recognition than it has yet obtained. And here I would beg to impress upon you that, in speaking as I have of the English Government and the system it has worked upon, I have done so without any special reference to the statesmen now holding office, or to any of their predecessors personally. My arguments and my illustrations have had reference to our Government in the abstract—to our Government as a whole, from the earliest times down to the end of 1870. They have been directed not against men, but emphatically against a system—against that system of which the present Government, and the great majority of its predecessors, have all along been the victims. Lord Mayo's Government, with obvious reluctance and regret, applied a very severe remedy to the country, after the late financial crash, and (speaking for myself), I think that the public, smarting as it still is from those severe remedies, is not in a fit state of mind to deal justly with the Government. I think that the public forgets that the Government is not only not responsible for the crash itself, but is also not responsible for the bad system which led up to it. A wrong system of rule had been long in vogue (long before the existence of Lord Mayo's Government), and it had long been laying up a crop of evils—especially financial evils—which must inevitably have shown on the surface some day. They came to the surface during Lord Mayo's Govern-

ment. Others had sown the wind, they are reaping the whirlwind; and in time I believe the public will recognize this. It will then be remembered that though the present Government applied the painful remedy, it had not produced the malady—that it was Lord Mayo's Government that saved us from a much worse fate by dragging the lurking evil into light; and that it was his Government that first publicly declared the errors of centralization, and took the first bold steps to abandon the system which bred them.

Hitherto I have considered the question only in one aspect—only in so far as it works detrimentally against the rulers who use centralization. There remains the other, and far more important point of view, that in which it works immediately and detrimentally upon the people. The very worst of all the great evils of a centralized Government is that, however filled with a sense of duty the rulers may be, however honest and active they may be, they paralyze all who are brought into contact with them. They not only paralyze their own subordinate agents, but they destroy the political life of the whole body of their subjects. I have said before that it is a misuse of terms to call that a Government which has no power of the purse, and I do not think it can be doubted that the Provinces are not now-a-days worked with the same brilliancy and effectiveness that marked the early days of our rule. Sir William Muir in the North-West joyfully hailed the new system as substituting a real Government for a sham, and I think that we in Bengal may rejoice for the same cause. Many people say that, in executive matters, the Bengal Civilian has lost all skill in administration, and that, on the bench, he merely plays at being an English lawyer, imitating, with all an amateur's proverbial success, only what is vexatious and objectionable in the courts of law at home. This may be an exaggeration, but it is an exaggeration only of that grave and memorable verdict against the Bengal Service, which was recorded by the Commissioners who enquired into the fatal executive failures which so miserably heightened the effects of the famine in Orissa. I have heard Bengal Civilians lament that a general dead level, barely relieved by one or two prominent names, marks the whole Bengal Service throughout, and I have heard the same laments made concerning two other Provinces. But the thing is more apparent than real. The able men *are* there, and many of them have shown before this Association and elsewhere that there is in

the Bengal Service much energy and eagerness to be active, much strong thought and capacity for grappling with practical problems. That they will at last be able to exercise these qualities in their profession, under a real Government, newly instinct with life, is not the least of the advantages that will follow upon decentralization.

But the last charge I have to bring against centralization is the gravest—the one in which all others are summed up and included. I charge against that system that, even when it is administered by men of the rarest ability, with the purest unselfishness, zeal, and public virtue, it is still hopelessly incapable of doing anything for the people. I charge against it that it, and its work, are in no respect national; that it is a mere external excrescence, which has no root whatever in the nation, but draws its life from mere physical power apart from, and outside of, the nation. I say that when such a Government comes to an end (and a Government which has its roots abroad is in constant danger of coming to an end), it will be found that, in the fullest meaning of the words, it has done nothing for the people. With the Government its healthiest institutions will die. Its good works will perish with it, and it will be succeeded by inevitable anarchy. For there is no social truth more absolutely certain than this:—that no people which has been for generations excluded from all share in governing themselves, can possibly succeed in that most tremendous of tasks when they first undertake it. In India, we flatter ourselves that we are *educating* the Natives into fitness for the task, but education will never fit any one for it. A man might just as well hope to be able to play the violin by reading instruction books only. Practice—the actual practice of the art—is as essential in governing as in playing the fiddle. I would ask you to look at the case of the great French nation. Less than one hundred years ago they swept away their centralized Government, and, after having been for centuries kept out of the work, first undertook to rule themselves. Their leaders were men of extraordinary abilities and education—nay, they had turned their vigorous thinking powers with especial energy to working out the theory of Government—and the Government of these unpractised theorists led directly to the most awful anarchy that has ever convulsed the world—an anarchy proportioned to their total want of practice—an anarchy which has been succeeded by other lesser ones, but always so great and appalling that the nation has

thrice since then voluntarily reverted to the despotism of central rule—even of personal rule—as a refuge from the learned and sincere but unpractical friends of true liberty.

Such is the nature of this last charge that I make against what I hope I may call the old abandoned system. Perhaps some who have heard me say so much of the failures of centralization, may think that I ought in fairness to have said something of its success. To tell the plain truth, I think that there has been an altogether false and unfair use made of those successes. God forbid that I should deny or decry those successes and the benefits they have bestowed upon this land. I need not recite them all. I will but indicate such things as the introduction of security and order into our empire—the honesty of our courts—the public virtue of our public servants—the enormous increase of trade and commerce—the making of rail-roads, canals, and telegraphs, and the flood of things which make up what we call material progress,—for why should I enumerate things which every Englishman knows and glorifies himself upon even if he knows nothing else about India. But I think it well worth while for us all to consider how much of our good work we can fairly attribute to ourselves as Englishmen ruling India. For I would ask you to observe that they may all be classed under one of two heads. They are either such benefits as naturally follow in every country upon the blessings of security and good order, or they are those which necessarily result from common honesty in the rulers. They do not depend upon us as Englishmen, on our national character, on our love of freedom, or on the spread of our political and social ideas. They would follow if our place here was taken by the greatest despots of Europe, if those despots had a position unassailably strong, and such honesty as mere selfish prudence would suggest. Just such national prosperity accrued to France when the personal government of the Emperor was too strong to be molested, and just such an honest administration of the laws did the French enjoy when no political considerations swayed the courts. There, as here, the Government arrogated to itself the credit of the nation's advance in material prosperity. I believe that, in both cases, the claim is altogether inadmissible, that material progress can no more be created by a Government than fair weather for the crops can be, that it comes purely from the people, and is the inevitable product only of national energy and enterprise, when the Government does not interfere with them either in a manner directly hostile or with well meant but officious meddlesomeness.

Then, again, we say we have *introduced* this large and increasing amount of material national prosperity, but our work is not to introduce it merely, but to establish and secure it. As long as they depend for existence upon public security and good order, and as long as public security and good order depend on the continuance of our rule in India, so long we English cannot be fairly said to have done to India the good works we claim to have done. They are a mere appanage of ourselves, which we keep here as long as we stay here, and which we take away with us when we go. If we were to withdraw from the country to-morrow, what would become of all our work, or rather, would it not be then apparent that we had done no real work? We would be like the gardener in the Arabian tale, who planted groves of green boughs, and filled *parterres* with gathered flowers, and the garden which he had made in a night withered in a day! So too our labours have struck no root, but if they are to live must strike home to the hearts of the people. If our works are to live we must cease to do them exclusively with our own hands, and must call in the Natives to help us. We must cease to do all his thinking for him, and begin to think with him. We must let him have his own share with us in managing our joint concerns. We must give him such a share in the practical government of his country as will enable him to continue our work should we go. So shall our labours and the prosperity of this great empire be made permanent, when the body politic shall no longer be living only in its head, but be instinct with vitality in every limb.

To do this is the inevitable tendency of decentralization, and all who live in India owe a lasting debt of gratitude to Lord Mayo's Government, because it saw that tendency, and for that very reason granted the boon. It is true that the December Resolution has carried us but a short way on the road, but the further advance to the end is not to be avoided. To me it does not seem difficult to foresee the decentralization of Bengal. Within that Government are included various nations exhibiting the very widest diversities of character, language, intellect, and civilization. It runs all through the gamut from the English of Calcutta through the Bengalees, the Beharees, the Ooriyas, and the Assamese, down to the wild tribes of Chota Nagpore and the borders. It has an enormous area, and I do not know of any one reason for decentralizing the Supreme Government, which will not apply, in time, with equal force to the decentralizing of Bengal, and so will it be with other Provinces. The

more they prosper, the more must we decentralize; and the more we decentralize the more necessary will it be to govern by a very extended use of both Native and English agency. I believe that the time will come when the administration of this country will not widely differ from that of England; when the Government will leave all local matters to the people, and allow them, Native and English, a potential voice in the general affairs.

I recognize one great obstacle which stands in the way. I speak of that unhappy want of sympathy between the English and the Natives, of which I have before made mention. When the two classes are called on to work together, this want of sympathy may interfere fatally to prevent all fusion, and to make the separation more marked. It is not for me to say which side is most to blame for the present undoubted estrangement, but I think I may say that we English can remove it if we will earnestly set about it, and that it is we who will chiefly benefit by a cordial reconciliation. It would be immeasurably to our advantage if we could bring ourselves to be less dogmatic, less bent upon getting our own way, more tolerant of adverse criticism, and less blindly convinced of the invariable correctness of English points of view and of the superiority of English ideas. Nothing more is wanted than that we should acquire a full comprehension of the real fact, that while we have certainly much to teach the Natives, we have certainly much also to learn from them. It is in our power to bring about cordial relations, and we have every inducement to make the sacrifice of false pride and false prejudices, which is all that is needed for the purpose. We should do it for the sake of our national reputation, for the sake of accomplishing the great work we have undertaken in this country, for the sake of our own personal position whilst we live here. The position of the English in India is one of the most anomalous of all political phenomena, and it is plain that it is becoming more and more irksome and intolerable every day. We are a people who absolutely revel in our own sense of freedom. We love liberty for its own sake, so much that we have the liveliest and most genuine interest in the freedom of others, and shout and rejoice at any successful struggle for freedom in other nations, as if some victory had been immediately achieved by ourselves. We especially pride ourselves on certain great privileges, which we consider to involve the first principles of a free constitution. At home we would all instantly take up arms against any rulers who sought to subject

us to laws which we ourselves had not made, or who sought to levy a penny that we had not ourselves consented to give. Yet out here are to be found crowds of Englishmen whose political life is passed in direct contradiction to their cherished political creed. The great majority of us have never had anything more to do with the Government of our country, here or at home, than our punkah-pullers have. We live without protest under a body of laws, to not one of which have we ever given, or been asked to give, our consent. Under one of those laws we allow ourselves to be punished severely as criminals for actions which, in our own country, are not criminal at all; and we pay up heavy taxes, not only levied without our consent, but in spite of our plainly expressed dissent. I doubt if the history of the world can show such another anomaly as the Englishman in India—so complete and strange a divorce between principle and practice.

To my mind the spectacle is a very grand one. It is only a people elevated by generations of freedom, that could thus confidently give up their liberties to their rulers, and exercise such firm self-control and self-denial for the furtherance of a noble national undertaking. But if there is any sincerity in our political and civil opinions, we do not mean this state of things to last; we look for the day when we shall be at liberty to be as free here as at home. Nevertheless, while we permit the continuance of an estrangement with the Natives, which it is in our power to remove, we are ourselves blocking up the only path that leads to that liberty to be free, for our road lies through the hearts of the Natives; and till we can act in friendly unison with them, we must be content to pass our lives out here, rather as if we were the subjects of the late French Empire, than like Britons proud of being their own rulers. If then, we go no higher than considerations of personal comfort and self-respect, is it not well worth our while to show a warmer consideration for the Natives? And is it not still more worth while, if we consider our national duty and reputation? When we loudly sympathize with the Poles, the Italians, the Spaniards of Europe, their tyrants sneer at our enthusiasm and point to India. We reply proudly that we hold this country only to restore it to its high place of usefulness to the world; that we hold it only until we have taught the Natives how to govern it for themselves. We can gain no belief, and why? Because if we were to leave India to-morrow, we are open to this reply: "You have never tried to teach the people to rule. You have chosen a system

“like ours, like that of the French Empire, which could not possibly teach the people to rule, and did not intend to. The good you have done, you have done selfishly for yourselves. It belongs to you, and has not been planted in the country. When you go, the good goes with you. Anarchy succeeds you, and the world learns that the task you have pretended to work on for one hundred years has never been even begun.” It would be very hard to defend ourselves from such a statement, as far as the past is concerned ; but Lord Mayo’s Government has given us an opportunity of making the defence easy for the future. We are now about to introduce the elements of free Government—of self-government. It depends chiefly on the English inhabitants of this country whether such Government can hereafter be introduced to the full. If we throw away that opportunity it will be hard to say that we deserve our position out here. It is a very grave consideration for us, for all Englishmen who will soon be called on to act with Natives. I would urge all such to let their contact with their native colleagues be real, to let there be a genuine action and reaction between the two races (as there must be if the contact is real), and not to let us English keep superciliously aloof, deciding all questions in accordance with our limited British ideas and our large British prejudices.

LIST OF PRESENTATIONS

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„ &c., Madras Government. No. XIV. Papers relating to the Survey and Settlement of the Chellumbrum and Manargoody Talooks of the South Arcot District, 1869	1
„ No. XV. Report on Public Instruction in the Madras Presidency, 1868-69	1
„ No. XVIII. Annual Report of the Civil Dispensaries, Session 1868-69	1
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EDITED BY

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RULES.

OBJECT.

I.—The object of the Association is to promote the development of Social Science in the Presidency of Bengal.

MEMBERSHIP.

II.—Any person who pays an annual subscription of twelve rupees, or a life subscription of one hundred rupees, shall be a member of the Association.

III.—Every member shall have the right of attending and voting at the annual, quarterly, and special meetings of the Association, of being eligible to any of its offices, and of receiving a copy of its Transactions.

IV. The annual subscription shall be payable in advance on the first day of January in each year.

V. Any member whose annual subscription shall not be paid before the end of the year for which it is due, shall be liable to have his name struck off the list of members by the Council. When a member of the Association proceeds on a temporary visit to England, he shall not be considered thereby to have resigned his membership, unless he communicates his intention to do so in writing; but if absent for more than six months, he shall not be called upon to pay a subscription for any year during which he may be so absent.

VI. Any member desirous of withdrawing from the Association must communicate his wish to the Secretaries in writing, but he will be liable for the subscription of the year in which such communication is received.

VII. Upon the nomination of the Council, persons eminent for their knowledge of Social Science, or who have rendered important services to the Association, may, at an annual meeting, be elected honorary members of the Association. Honorary members shall have the same privileges as ordinary members, and they shall be exempted from the payment of an annual subscription.

OFFICERS AND GOVERNMENT.

VIII. The Association shall have a President, two Vice-Presidents, and two Honorary Secretaries, who are also Treasurers.

IX. The Association shall be governed by a Council, consisting of fifteen ordinary members, besides the above office-bearers. The Council may fill up vacancies in its own body as they occur during the year.

X. All office-bearers and ordinary members of Council shall be elected at the annual meeting, and shall hold office till the annual meeting next ensuing; they shall be eligible for re-election. (This rule shall apply to all officers elected by the Council during the year.)

XI. The Council shall ordinarily meet once a quarter, and when specially summoned together by the President of the Association, or at the requisition of any five members of the Council.

DEPARTMENTS AND SECTIONS.

XII. The Association shall be divided into four Departments: the *first*, for *Jurisprudence and Law*; the *second*, for *Education*; the *third*, for *Health*; and the *fourth*, for *Economy and Trade*.

XIII. The Council shall appoint, from their own body and from the members, four Sections corresponding to the above Departments. The President and Secretaries shall be *ex-officio* members of every Section. Each Section may appoint its own Chairman and Secretary, who, if not already members of the Council under Rule X, shall have the right of taking part in its deliberations and of voting at its Meetings.

XIV. The work of a Section shall consist in collecting, classifying, and arranging the papers and information relating to its own department. For this purpose it may associate with itself other members of the Association.

SUB-COMMITTEES.

XV. The Council may also form other Sub-Committees of its body for special purposes, and such Sub-Committees shall also have the power of adding to their number other members of the Association. The President and Secretaries are *ex-officio* members of all Sub-Committees.

MEETINGS.

XVI. The meetings of the Association shall be annual, quarterly, and special.

XVII. The annual and quarterly meetings of the Association shall be held in Calcutta. The former shall be convened by the Council in January of each year, and the latter in the months of January, March, July, and November.

XVIII. Special meetings of the Association may be convened by the Council at such time and place and for such purpose as they shall think fit.

XIX. At the annual meeting of the Association, the President or one of the Vice-Presidents, shall deliver an address, and the general and sectional reports for the past year shall be read.

XX. The quarterly meetings of the Association shall be held for the reading and discussion of papers merely.

SECRETARIAT.

XXI. The Honorary Secretaries shall, by mutual agreement, divide the duties of their office between them, reporting such arrangement to the Council.

ACCOUNTS.

XXII. The accounts of the Association shall be audited by two members of the Association not being members of Council, who shall be appointed at the annual meeting.

XXIII. The funds of the Association shall be lodged in the Bank of Bengal, and cheques shall be drawn only upon the signature of the President (or one of the Vice-Presidents) and one of the Secretaries.

BRANCH ASSOCIATIONS.

XXIV. The Association shall correspond with, and affiliate to itself, Branch Associations established out of Calcutta.

XXV. As a condition of affiliation, Branch Associations shall pay to the funds of the Parent Association a sum of six rupees per annum for each one of their members, in return for which such members shall be entitled to a copy of its Transactions, and to the privilege of attending its meetings in Calcutta or elsewhere.

**BYE-LAWS FOR THE CARRYING OUT OF RULES
XIII AND XIV.**

1. The Chairman of each Section shall preside at all meetings of the Section, whether for the reading and discussion of papers, or for the transaction of ordinary business. The Secretary to the Section shall report the proceedings.

2. So far as regards the collection, classification, and arrangement of statistics, and the consideration of communications, each Section shall ordinarily be left to work independently of, and without interference by, the Council. But a report of its operations shall be furnished by each Section to the Council at the close of every year in time for its incorporation with the annual report of the Council.

3. Each Section shall be allowed to incur a contingent expenditure for printing charges, postage, and sundries, not exceeding Rs. 20 per mensem. Proposals to incur a larger expenditure shall be submitted for the previous sanction of the Council.

4. The Transactions of the Association shall continue to be edited as heretofore by the General Secretaries of the Association; but the report of the discussions upon any paper shall be drawn up and furnished to them by the Secretary to the particular Section in which that paper was read.

5. If it is thought desirable to print any paper, either wholly or in part, before the meeting at which it is to be read, in order that copies of the paper may be distributed beforehand, and the discussion upon the subject thereby promoted, the Section shall make an application to the Council; and if the printing be sanctioned, the paper shall be made over to the General Secretaries for that purpose.

REGULATIONS REGARDING PAPERS.

1. With a view to direct the communications of members and others into the most useful channels, the Council have drawn up certain heads of enquiry in each department. But it is not intended to confine discussion to these particular subjects; papers on other interesting topics which may occur to individuals, will also be accepted by the Council.

2. All papers should be sent to the Honorary Secretaries at the Metcalfe Hall, at least one month before the meeting at

which they are to be read. On the first page of every paper should be written the subject and the name and address of the author.

3. As a rule, all papers shall be submitted by the General Secretaries to the Section which they may concern, upon whose recommendation alone they shall be accepted by the Council, provided that, in special cases, in which the President may think it conducive to the interests of the Society, he may, on the inspection of a paper, exercise his discretion in accepting it without previous submission to the Section.

4. A paper will ordinarily be read by its author, or by some friend nominated by him for the purpose; failing such, it will be read by the Secretary in the particular Department which it concerns.

5. Papers, when read, should be left with the Secretary to the Department, by whom they will be returned to the General Secretary.

6. No paper already published can be read. No paper which has been accepted can be published privately, except by permission of the Council.

7. The Council may print any paper either in whole or in part, or may exclude any paper altogether from the Transactions, as they see fit. Members of the Association will be entitled to twenty spare copies of any papers which they may contribute.

8. All papers should be composed in as clear and concise a style as possible. They should be confined, as far as practicable, to the relation of facts and observations bearing upon the question, and should avoid, as far as may be, the enunciation of general principles and of philosophical theories and reflections. It is quite true that the promotion of Social Science demands that deductions should be drawn from ascertained facts, but it is believed that the requisite *data* have not yet been accumulated, and that the Association will, for the present at least, be most beneficially engaged in the collection of Social Statistics.

9. With a view to preserve the object with which general meetings of the Association are held,—*viz.*, the discussion of the subjects which may be then introduced,—no paper shall be read *in extenso* which will occupy more than a quarter of an hour in the reading, but in the event of the paper being longer, a *precis* or abstract shall be read instead. Such abstract shall be submitted for the approval of the Council, together with the original paper.

ANNUAL REPORT OF THE COUNCIL

FOR THE YEAR 1871.

THE last Annual Meeting of the Association was held at the Town Hall on the 2nd February 1871. It was very numerously attended, the audience consisting of upwards of one thousand persons. Among the distinguished visitors present, were His Excellency the Viceroy, His Highness the Maharajah of Pattialah, His Honor the Lieutenant-Governor of Bengal, and the Lord Bishop, besides the *elite* of the European and Native community. Dr. Joseph Ewart, the President of the Association, delivered an address. Mr. W. Clark, Engineer to the Calcutta Municipality, then read a paper on the Drainage System of Calcutta, which he illustrated by reference to numerous diagrams on a large scale. At its conclusion, His Excellency the Viceroy proposed a vote of thanks to the learned President for the able address which he had delivered, and to Mr. Clark for his valuable paper on the Drainage of Calcutta. His Excellency said that he had always taken a deep interest in societies similar to the Bengal Social Science Association; that he considered such institutions capable of doing a great deal of good in promoting the advancement of knowledge and the amelioration of the people, particularly of the poorer classes, who, without a judiciously regulated system of protection, were unable to take sufficient care of their own lives and property. He trusted that the Association would persevere in its noble endeavours to collect, classify, and publish useful information, thus rendering an important aid to the Government and to the com-

munity at large. The Meeting was brought to a close by a series of interesting electrical experiments by Dr. Kanye Lall Dey.

The Quarterly Meetings were held in February, March, and April last. At the first of these Meetings, held on the 24th of February 1871, which was numerously attended, Baboo Keshub Chunder Sen delivered an ex tempore address on Native Female Improvement. The adjourned Meeting, held on the 25th of March, was devoted to the discussion of Mr. Clark's paper on the Drainage System of Calcutta. The Meeting of 22nd April was occupied with the reading and discussion of papers on various topics of practical interest and importance. These, as well as the addresses referred to, will be found in the 5th volume of the *Transactions* just published.

There were 225 members on the list during the year 1871, of whom four have been removed by death, and twenty-one have withdrawn from the Association, leaving 200 on the rolls on the 1st January 1872. About the close of last year, Mr. Dudley Smith, formerly an ordinary member, became a life member of the Association.

The Council beg to record its deep sorrow at the irreparable loss which the Association has sustained in the untimely death of the late Officiating Chief Justice,—the Hon'ble J. P. Norman, who filled the office of Vice-President in 1868 and 1869, and who always took an active and lively interest in the welfare of the Association.

The balance of 1870 was Rs. 861-5-0, which, added to the subscriptions realized in 1871, *viz.*, Rs. 1,085, aggregates Rs. 1,946-5-0, the expenditure of the past year being Rs. 1,413-10-3. The balance available for the expenditure of 1872 is Rs. 532-10-9. The amount

of arrears to be collected is Rs. 2,966. The Council take this opportunity to urge upon those who are in arrears to settle their accounts with as little delay as possible to enable the Association to carry on its operations vigorously.

The Government Securities for Rs. 3,000, purchased last year, have been placed in the custody of the Bank of Bengal.

The question of providing accommodation for the Meetings and Library of the Association engaged the attention of the Council during the past year. The Council being of opinion that the location of the Association and the holding of its Quarterly Meetings in one of the rooms of the Dalhousie Institute would be productive of mutual benefit, a letter was addressed to the Secretary of the Institute, but it appears that the accommodation sought for cannot be conveniently afforded.

With a view to facilitate reference and promote active working of the Sections, the questions circulated in previous years were reprinted and forwarded to the members of the Sections. A report was called for from the Secretaries to the Sectional Committees, in accordance with paragraph 2 of the bye-laws. Only one reply has been received,—*viz.*, from the Secretary to the Law Section,—intimating that nothing was done, as no papers had been received in that Section. The Council think it their duty to impress upon the Sections that, without their active co-operation, the objects of the Association cannot be fully carried out. The Council therefore trust that the Chairmen and Secretaries of the Sections will continue to give to the Association their active and cordial support.

Many valuable additions have been made to the Library, chiefly through the kindness of the several

Governments and of private individuals, for which the best thanks of the Association are due. The Council also take this opportunity to specially acknowledge with thanks the receipt of the Transactions of the National Association for the Promotion of Social Science for 1871, which the Secretary was good enough to send.

With the view to enable the Association to avail itself of the aid of the members generally with reference to their pursuits and professions, the Council beg to recommend that the Rule XIII be modified as follows:—

PRESENT RULE.

The Council shall divide itself into sections corresponding to the above departments. The President and Secretaries shall be *ex-officio* members of every section. Each section may appoint its own Chairman and Secretary, who, if not already members of the Council under Rule 10, shall have the right of taking part in its deliberations and of voting at its meetings.

PROPOSED RULE.

The Council shall appoint from their own body and from members, four Sections corresponding to the above Departments. The President and Secretaries shall be *ex-officio* members of every Section. Each Section may appoint its own Chairman and Secretary, who, if not already members of the Council under Rule X, shall have the right of taking part in its deliberations and of voting at its Meetings.

The practice hitherto has been what is now recommended.

PEARY CHAND MITTRA,

T. J. CHICHELE-PLOWDEN,

Hon'y. Secretaries

CALCUTTA,

The 29th January 1872.

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BENGAL SOCIAL SCIENCE ASSOCIATION.

ADDRESS

BY

DR. JOSEPH EWART,

PRESIDENT OF THE ASSOCIATION.

[Delivered on the 14th March 1872.]

YOUR EXCELLENCY, YOUR HONOR, LADIES AND GENTLEMEN,

SINCE we met last year upon an occasion similar to this, India had been deprived by the hands of assassins of two of her foremost administrators, England of two of her worthiest sons, and this Association of two of its most effective and distinguished supporters (applause). The late Officiating Chief Justice Norman, who by his amiability, uprightness, and unswerving straightforwardness had endeared himself to all classes of the community, took a most active part in the working of this Society during its infancy, and contributed materially to its subsequent expansion and usefulness (hear, hear). Our late Viceroy, of whom it might be truly said that, by his noble, manly and commanding presence, his urbanity and amiability of disposition, coupled with administrative and governing talents of the highest order, he had won the respect, love, and admiration of all who were brought into direct and indirect relation with him (applause), always took a deep interest in our labors, and heartily identified himself with our humble aims, hopes and aspirations. One of the last pledges which His Excellency made on the eve of his departure for Burmah was that he should be happy to attend our annual meeting on his return from that country. He (the President) saw many around him there who would recollect how readily His Excellency consented last year to lend them his personal influence for the advancement of Sociology in India, and who would remember his words on that occasion. He then said that he had always taken a deep interest in Societies similar to the Bengal Social Science Association; that he considered such institutions capable of doing a great deal

of good in promoting the advancement of knowledge and the amelioration of the people, particularly of the poorer classes, who, without a judiciously regulated system of protection, were unable to take sufficient care of their own lives and property. He trusted that the Association would persevere in its noble endeavours to collect, classify and publish useful information, thus rendering an important aid to the Government and the community at large.

Coming as these words did from the representative of the Queen, and the virtual ruler of upwards of one hundred and fifty millions of people, at a time too when the Association did really need the most influential support that could be commanded, they at once became possessed of a charm and a value which commended them to the hearts of all who could fully understand and appreciate their significance (applause). The Queen and Parliament and people of the United Kingdom of Great Britain and Ireland, the people of all classes and creeds in this country, have mourned over his untimely end; the Government and the people throughout the length and breadth of the land had observed the strictest respect for his memory, and the community were now to have the opportunity and privilege of voluntarily testifying in a practical shape to his greatness and nobility of nature, in which he (the President) was quite sure the members of the Association would individually co-operate, and take a humble though not an unimportant part. If their loss had been so irreparable, what must be the enduring grief of his bereaved widow and nearest relations, all of whom did so much to assist him in their respective spheres, in his great work of governing British India and in upholding the prestige of the British name beyond our frontier in the East (applause). Nothing which he (the President) could now say on behalf of the Council and members of this Association could possibly lessen the heavy weight of the calamity which had fallen upon them; but he hoped, as time rolled on, the reflection and recollection of the universal esteem and admiration in which the late Earl Mayo was held during his Viceroyalty might tend in some small measure to soothe or mitigate the greatest sorrow of their lives (cheers).

In my Address, last session, I briefly alluded to the urgent necessity for the introduction, into the Schools preparing students for the Entrance Examination of the University of Calcutta, of the study of the rudimentary principles of the Natural and Physical Sciences. Since then, Baboo Rajendra Lalla Mittra has addressed the Syndicate, urging the entertainment

of this question : whereupon a Sub-Committee was nominated by that body for the purpose of considering the best mode of introducing Natural and Physical Science into the Schools and Colleges in India. The report of the Sub-Committee has been circulated for the opinions of educational officers and other gentlemen, which opinions, together with the report, are now under the consideration of the Syndicate.

I now propose to answer some of the objections that have been made to the Scheme propounded by the Committee. Before doing so, it will be necessary to give a general idea of the Scheme, the elaboration of which was attended with great difficulty on account of its novelty in the educational system of this country. The first desideratum was that the application of the Scheme should be *practicable*; the second, that it should involve teaching of a *practical* character—that, in short, it should inculcate a knowledge of things in contradistinction to mere book knowledge, and that it should be directed to developing and training the powers of observation rather than those of mere memory. The Committee, at the outset, “are fully aware that most of the difficulties that will have to be met in carrying out the Scheme now proposed will be owing to the enforced observance of this latter condition ; but they hold that these difficulties must be met and overcome, at whatever cost of exertion and pecuniary outlay, if the teaching in Physical Science is to fulfil its main object, and is not to degenerate into a mere act of reproducing words and phrases which in the learner’s mind are not clearly associated with their appropriate external objects.”

Preference has been given, as far as practicable, to subjects which admit of experimental illustrations in the class room, or which permit of specimens—botanical or zoological—being easily obtained for demonstration, or which—such as Physical Geography—can be regarded as appertaining exclusively to India. The object has been—not to elaborate a course of Science to qualify for a Doctorate of Science, which could easily have been copied from any recent Calendar of the London University—but in strict conformity with the instruction of the Syndicate “to report on the best mode of *introducing* the study of Natural and Physical Science into Schools and Colleges in India. Hence, it has been deemed expedient not to adhere to a logical sequence of subjects and to omit several, because, under existing circumstances, they could not be made to harmonize with the two fundamental conditions of (1) immediate practicability, and (2) the cultivation, by demonstrations, of the powers of observation. In a scheme simply intended to *initiate* or *introduce* the

teaching of Natural and Physical Science into the primary and collegiate institutions of the country, it would have been a mistake to include any subject which did not admit of these conditions being fully complied with. This, doubtless, has given to the plan of the Committee a slightly fragmentary appearance. But it must be quite manifest that, under the circumstances in which the teachers and taught are at present placed, a perfect, comprehensive and symmetrical system of scientific training is simply an impossibility. If, however the Scheme had been adopted in its entirety, or even if a modification of it had been assimilated, it would in time have led up to the development and growth of such a perfect order of scientific training as has already been recognized by the Degree of Doctor of Science in the University of London.

Just as liberty has been taken from necessity to depart from a symmetrical course of science for the present, so from choice a subject has been selected, which, though it may seem foreign to the purpose, is nevertheless important as an aid to the development of the faculty of observation. I allude to drawing in outline, simple and easy to learn as it is eminently useful in the learning of the practical sciences, especially in the observation of form and proportion. "Another most important advantage of this kind of instruction is that it greatly facilitates all conceptions relating to space. In teaching mathematics to Bengali students, the greatest difficulty has been experienced in getting them to comprehend the most elementary propositions concerning lines out of place. They cannot see that a circle projects into an ellipse, or that when a rectangular base is drawn in perspective, all the angles at one corner of it are not projected into right angles. For these and similar prejudices of the mind, a practical knowledge of perspective affords a simple and valuable corrective. As an auxiliary, therefore, to the teaching of science, drawing must be conceded to have a very high value, and it is as an auxiliary that claims a place in the present Scheme. Of the importance of drawing in general education, of the additional power of describing objects or conceptions which it confers on those who possess it even in a very moderate degree, it is unnecessary here to speak, but such considerations may be allowed due weight in estimating its claims to be admitted into a course of liberal education." (*Report.*)

The Committee recommended the following course of Science as the most practicable and best adapted to the end in view:—

A. For the Entrance Examination, it was proposed to add to the present list of subjects—

1. Sixth book of Euclid.

2. The answers to a Schedule of question (Appendix A.) on a set of boxes of apparatus by Ladd, Griffin, and other instrument makers, illustrating experimental statics, hydrostatics, pneumatics, heat, magnetism, and electro-magnetism.

B. The following subjects to be introduced for the First Arts Examination:—

1. Drawing. Stage I. of the Government School of Arts Course, viz., Elementary Linear Drawing,—(a) By aid of instruments (Practical Geometry); (b) Free hand outlines of simple rigid forms from the flat (*i. e.*) from copies or flat examples.

2. Physical Geography of India; and one of the following according to option.

3 (a). Botany according to Appendix B.

3 (b). Elementary Chemistry according to the Schedule extracted from the London University Examination for women, in 1869, omitting the section on Heat.

C. In the course for the Degree.

1. Drawing, viz., a portion of Stage IV of the School of Arts Course. (a). Higher Practical Geometry; the use of Scales and other Mathematical Instruments. (b). Projective, orthographic, isometric, and perspective; and the projection of shadows.

2. Chemistry and Physics as at present laid down in the list of optional subjects.

3. Zoology as in Milne Edwards.

At the meeting of the Senate in May last, several distinguished native gentlemen, whilst endeavouring to reduce the minimum age for the Entrance Examination below 16 years, or to remove any limit whatsoever, declared most emphatically that the chief reason they had to urge for the desired change was that the Entrance Course was insufficient to engage the full attention of the pupils. They insisted that many or most of the boys mastered the Course before they were 16 years old, and that the consequence of this was that the latter part of the period over which the curriculum extends was often spent in idleness and disappointment. It was on this foundation that the Committee remark as follows: “With regard to the Entrance, indeed, it appears from facts recently laid before the Senate that some additions may be made to the present Course with advantage, since it is stated by those well qualified to speak to the facts, that the present Course is insufficient to occupy many of the candidates up to the age of admission to the examination.”

Hence, it was that the additions aforesaid were recommended to be added to the Entrance curriculum.

It would seem, however, that the weight of testimony among educational officers and others consulted by the Syndicate is opposed to this addition,—1st, because, for the present, it is impossible for boys to bear this burden plus the existing Course of study; 2ndly, because it would be exceedingly difficult to find suitable teachers; and 3rdly, because the innovation would be so costly as to be too heavy a burden on the pockets of the tax-payers. My answer to the first objection is that, if it be true that the boys cannot possibly learn the rudiments of the branches of science indicated, in addition to the subjects already laid down, some one or more of these should be removed to make room for the teaching of science. To the second objection I reply that once let a demand be made for teachers in Physical Science, and the supply in overflowing abundance will soon be forthcoming. To the third objection I would point out that the cost has probably been exaggerated, and that if the people were consulted, they would willingly bear the additional cost for advantages which would in good time convert an educated class of theorists and bookworms into a nation of practical men. As time rolled on, our native fellow subjects would have their minds directed to a precise and accurate knowledge of things, whilst the faculty of observation as well as that of memory would be cultivated and developed, at a stage of the educational course, when it would be most advantageous.

If science is to form an important part of the education of the young, and to confer the greatest benefit on the greatest number, I contend that it should form an integral portion of the Course leading up to the Entrance Examination. As a training of the mind to accuracy of thought and expression, Experimental Science is a necessary sequel,—scarcely second in importance—to languages and mathematics; and, to my mind, infinitely superior to history or mental and moral philosophy. So long as the unspoken languages, such as Sanskrit, are encouraged to the exclusion of Physical Science, no sound objection can be made to its introduction into the Schools of India. For, in this matter of fact and practical age it is useless to rank the dead languages above the Experimental Sciences, either as an exercise to the mind, or as a means of developing the powers of observation. Moreover, it should be recollected that whilst science is being taught it would be conveyed in English, and such teaching would react in diffusing, rather than curtailing, the knowledge of this language, which is the key to the

philosophy, history, and science of the West. Who, after an intelligent review of the merits of this question, can doubt the fact that it is of infinitely greater importance for boys in the Zillah Schools to utilize their time in the pursuit of science than virtually to waste it in the cultivation of Sanskrit, which can never be of any great practical value to a preponderating majority of the pupils? Thus, when it becomes a question at the present day as to whether Physical Science shall still be practically excluded from the teaching of our Zillah Schools, because one of the defunct oriental languages has been preferred to it, the verdict must sooner or later be to have this order of things reversed, or at all events so modified and re-arranged as to give to science an equal, if not a preferential, claim upon the suffrages of the pupils.

But we have been told that "the schools are the very institutions where this experiment is least likely to prove successful, where, in fact, failure is inevitable. The youth of the pupils, the inexperience of the teachers, the unscientific medium in which the ordinary Hindu lives, the difficulty of obtaining and preserving the requisite apparatus, the technicality of scientific language, the absence of anything like museums or institutes, are obstacles, any one of which might induce us to pause in the attempt to bring about such a change, but which in combination present a solid rampart of resistance that is absolutely insurmountable." Now, if such objections as these had been allowed to weigh with the Government of the Hon'ble East India Company when they resolved upon the introduction of general and special education among their Indian subjects, in what position would the country have been at the present day? The civil and medical services, covenanted and uncovenanted, would have been deprived of the services of a body of educated native gentlemen whose aid has become essentially necessary to the harmonious administration of the civil and medical concerns of the empire; the natives would not have found a place on the Bench of the High Court; a native bar, which, though far inferior to that of Westminster Hall in point of learning, can, according to the testimony of no less an authority than Sir Barnes Peacock, argue cases with considerable ability, would have been in abeyance; a body of medical practitioners, some of whom are as skilful as their European brethren, now doing an immense amount of good amongst their fellow countrymen, would have had no existence; native members of the Legislative Council of Bengal, who scarcely yield in point of ability to many of their European colleagues, would have been looming in the far future, whilst the

political status of Bengal would have been in the hopelessly backward condition in which it was situated thirty or forty years ago. If such unreasonable objections as these had been allowed to prevail with our Honourable Masters, the general and special educational institutions now adorning the land, and reflecting imperishable honor on the statesmanship and forethought of Government, would have remained undeveloped and uncultivated.

The truth is that so far from these objections forming, either individually or collectively, "a solid rampart of resistance that is absolutely insurmountable," there is not one of them which cannot be brought forward as a reason why Physical Science should form a part of the teaching in the schools. The youth of the pupils, embracing a period up to 16 years of age, a period of life when the demonstration of nature's laws makes a striking impression on the mind, is a requisite rather than an obstacle for the cultivation of the powers of observation. This is just the period of life when it is desirable to incite the mind to inquiry into cause and effect, to stamp the character with a love of truth as illustrated by the experiments of Natural Philosophy. It is now, that, if laid at all, a scientific stratum should form an important part of every system of general education. For, if not entered upon at this stage of the student's career, when the reason why is demanded at every new phase of scholastic advancement, *the time* of all others is lost for commencing the training of the powers of observation. If, however, it be really true that the pupils are already overworked, then, as I have said before, room should be made for Physical Science by the removal of any subject which can be best spared,—Sanskrit or Outlines of Ancient History for example, or by a modification of the standard.

The inexperience of the teachers is surely a thing which admits of correction, either by giving the necessary knowledge and experience, or by appointing men specially named to teach Experimental Science, or by means of both these devices. The unscientific medium in which the ordinary Hindu lives is one of the strongest reasons that can be advanced in favor of the teaching of Physical Science. Surely, in the face of such eminently successful institutions as the Medical Colleges of India, the difficulty of obtaining and preserving the requisite apparatus and the technicality of scientific language cannot be so insuperable as has been stated by the opposition. So, with reference to the absence of museums or institutes. It is not surprising that the present system of education should still leave, with few exceptions, the country devoid of collections illustrating its

fauna and flora; the implements and machinery employed in husbandry and commerce; and the more common apparatus used for illustrating the facts of Natural Philosophy. Would this have been so, if Physical Science had been made an integral and essential element of general education? I think not. One main reason why museums and institutes have not flourished more, is because there has been no scientific training of a practical nature to inculcate a taste for their foundation and improvement. That, however the taste for Natural and Physical Science finds a place in the minds of the people of India, is manifest from the large number of visitors from all classes of the community who flock to inspect the collections of the Asiatic Society. And, if science occupied the place to which it is entitled in the education of the youths of India, museums would spring up, in due course, in obedience to an irresistible demand in almost every town of any importance in the country.

Notwithstanding the fact that our University is avowedly founded on the model of the London University, the old policy of Oxford and Cambridge is apparent in the exclusion of science. The deplorable result is well stated by Mr. Lobb, who is apparently so disgusted with the present out-turn of our educational system, that he has arrived at the conclusion that the State should only continue it for the purpose of "providing an adequate number of intelligent native officers, both able and willing, to assist the ruling power in carrying out the work of Government," or that it should "gradually abandon education altogether" into the hands of private individuals. He is under the strange impression that the Scheme of the Committee is calculated to strengthen and perpetuate the delusive results "hitherto obtained, and that the object is to exalt the Schools at the expense of the Colleges." No such thing. It would seem self-evident that by improving the standard of education in the Schools, the process must react in elevating the training in the Colleges. What is it now that interferes with the successful maintenance of a high standard in the Colleges? Nothing else but defective preliminary instruction in the Schools both as to kind and quality. Let education in these schools be directed more with a view to develop and cultivate the powers of observation and less with the object of overburthening the memory only; let the hands, eyes, and brains of the pupils be employed for the illustration of the laws of Natural and Physical Science, as well as for the learning of languages, history, mathematics, &c., and the lamentations of Mr. Lobb will gradually become unnecessary.

Mr. Lobb says, "the Committee is anxious to popularize science, and to let it filter down by degrees to the general mind—an aim well enough in the abstract, but altogether premature in a state of society like that which now prevails in Bengal. Does the Committee really entertain the idea that any important change in the national mind could be effected by the introduction into our schools of a few superficial lessons upon Physical Science? Does history warrant us in concluding that great social or intellectual reforms can arise anywhere, except in obedience to inherent tendencies in the people among which they take place; and without some strong belief operating upon their feelings so as to stimulate and sustain their action?"

It is admitted on all hands that the education, as at present conducted, is far too metaphysical, far too little scientific. If so, what is the remedy demanded? Certainly not to make it more metaphysical or to retain the *status quo*, but to make it less metaphysical and more scientific. And as perfection cannot be expected to be arrived at at once, it was proposed to make a beginning not by giving "superficial lessons," but a moderate allowance of real practical training in some of the more useful and easily-mastered branches of Physical Science. The last interrogatory quoted displays a disregard for the history of the existing generation in India, which to my mind is utterly unaccountable—a period in which, it is well known, that great social and intellectual changes have been brought about, and are still being worked out, notwithstanding the fact that the inherent tendencies of the people was at first strongly opposed to them. The people in this country did not want education, railways, municipalities, when they were first proposed, yet have these not worked wonders in the social customs and intellectual advancement of the people? Why if our rulers had waited until these vast undertakings had been called for "in obedience to the inherent tendencies in the people among which they take place," India would, at this time, have been without railways, telegraphs, education, municipalities and a score of other reforms affecting their welfare and the safety of their lives and property, whilst Meriah sacrifices, Suttee, and the practice of polluting the sacred Hooghly with the bodies of the dead, would not have been as yet rendered illegal by legislative enactments.

But we are told that the present course of instruction "should be improved rather by pruning and strengthening the curriculum as it now stands, than by adding to it subjects which as yet the general Hindu mind is quite incapable of assimilating."

If this has any signification at all, it simply means that the native lads of this Presidency have been deprived by the Almighty of a faculty largely developed among the youths of Western nations. By what physiological or ethnological process of reasoning or demonstration such a conclusion as this has been hazarded is not stated. But where is the proof that the youths of India are so strangely constituted that they must be regarded as intellectually incapacitated for the assimilation of the Experimental and Natural Sciences? How has it been arranged that one branch of the great Aryan race which migrated from the steppes of Central Asia towards the west has been highly endowed with the observing faculty, whilst another branch which wandered over the plains of India and along the valley of the Ganges must be declared to be destitute of this important faculty of the mind? The truth is, that no such blank is to be discovered in the brain of the ordinary Native, nor in the mind which plays upon it. The faculty is there; the physical power is there, if cultivated. It may be that both are in a comparatively virgin condition for want of opportunity to undergo development, growth, and maturation. It is certain that the present system of training tends to foster the cultivation of the memory rather than the powers of observation. But this may be said, that whenever opportunity has been afforded for instruction in scientific subjects, such teaching has been greedily devoured, and with fair average success. We see an exemplification of the accuracy of this statement in the unparalleled growth of medical education, and in the readiness with which students enter our Engineering schools. And if it be said that this success is not so great as it ought to be, the solution of the difficulty is rather to be found in defective preliminary training in English and science, than in any physical or intellectual incapability on the part of our students for assimilating scientific knowledge.

Though the recommendations of the Committee have been virtually shelved for the present, since certain optional scientific courses have only been entertained by the Syndicate, the commencement of a discussion, which must eventually lead to the embodiment of a larger amount of scientific training into our educational system, has been made. And I am very much mistaken if the opposition which has succeeded in throwing out the Physical Science Bill will not, in the course of a very few years, be viewed as antiquated and behind the times in which we move and live. It is well known that the claims of Natural and Physical Science to a secure and lasting place in the educational system of England, not inferior to that now occupied by languages and mathematics,

is advocated by some of the most profound thinkers of the age; that the time has arrived when effect is about to be given to the generally-diffused wish on this point; and that a commission is, it is understood, now about to sit for the purpose of opening the door for the admission of a larger amount of science into the curricula of Oxford and Cambridge. Are we to wait here simply to follow in the wake of England in this matter? Is India to go through a long embryo stage of preparation, like the Western nations, extending over many centuries? Is it a sound argument to say that because England has passed through a long career of preparation for the introduction of scientific training in her schools, India must also do the same? I always thought that one of the immense advantages of British rule was that the science and philosophy of the West could be taught to the natives of India in the course of a few years, and that those of them who have availed themselves of our teaching could, in a properly adjusted course of education, step forth into the various arenas of competition, from the rust and rottenness of two thousand years, into the solidity and soundness of the present time. Have not some of these men, who are by inference declared incompetent to assimilate scientific instruction, left their hearths and homes, travelled half-way round the globe, and afterwards competed successfully for Degrees in England and Scotland, and for admission into the Indian Civil and Medical Services of Her Majesty? Where then is the justice of this cry that the native youths are incapable of imbibing and profiting by scientific instruction? There is nothing in the past or present condition of native intellectual power which would warrant such a statement. Long as the faculty of observation, and the accompanying genius for invention and discovery have lain dormant or fallow in India, the results of the very imperfect education hitherto conveyed is by no means discouraging; and there is fair reason to hope, that when the system of instruction is more deflected into scientific grooves in which most of our marvellous discoveries of late have been made, the natives will not be far behindhand in contributing knowledge and novelties calculated to improve the condition of the people of all nations. Until this bent is given to education, it is idle to expect that they can do much in the way of discovery. Once, however, train the youth of the country in the Natural and Physical Sciences, and a basis will thus be laid for the erection of a superstructure, the capital components of which will be ranked as worthy followers of Newton, Faraday, Liebig, Brodie, and Jenner.

It requires but a small amount of penetration below the surface to enable any one to perceive that our existing metaphysical system of education is fast flooding the country with a class of gentlemen who cannot find occupation suitable to the kind and nature of training they have received. So long as the demand for this class was somewhat equally measured by the supply, no particular inconvenience resulted. But now that the supply has exceeded the demand, the educated men, over and above the number actually required, are said to be dissatisfied with a position which unfits them for relegation to the sphere from which they have raised themselves; and their feelings, under such abnormal circumstances, can be as well imagined as described. Blame, I perceive, has been unfairly attached to many of these men for cultivating learning simply for its utility from a worldly point of view. Why, is not utility the very purpose for which education is mainly conferred? Is not education the best of all investments as a general rule? And is it not because this is so, that such great endeavours are from time to time made to improve the means and agency by which it is imparted to the rising generation in all civilized countries? Furthermore, is it not this utilitarian principle of education in general that has been steadily working the necessary changes as if to enable it to be accommodated to the wants of the day? Is it not a particular form of education that enables the statesman, the clergyman, the lawyer, the physician, the engineer, the soldier, and the merchant to maintain their respective positions in their professions and in the scale of society? Will any one be bold enough to declare that any of these classes would spend large sums of money, and an important part of their youth, in accomplishing themselves for their respective avocations, were it not for the utilitarian objects in view? Depend upon it: it is with education as with other things, after which men have an honorable ambition for excellency, success, or, it may be, distinction. The claptrap which would have us to believe that there are classes of men, if perhaps we except some religious castes, who spend their lives for learning alone without any other ulterior worldly end in view, is contrary to the experience of the past as also of the present. The mass of men are not so actuated in their cultivation of knowledge. Life is far too short and uncertain to permit of any such pastime, excepting to the rich and a few enthusiasts. Why then should the natives of India be taunted for their great love for scholarships and for devoting themselves to those studies which fit them in after-life to turn them to use and profit? Is not education to them, as to most other people who are blessed with it, a means of

gaining a respectable and honorable livelihood? If, as is hinted by some, many of the natives are being over-educated for the parts which they are obliged to fill, this is rather their misfortune than their fault.

It is to correct, or, at all events, mitigate or neutralize this heavy misfortune common to this and other countries that the movement for teaching the natural and physical sciences in the schools has assumed a tangible shape in the minds of many distinguished men in Europe and in India. What is wanted is a system of training, which, whilst affording sufficient scope to modern languages, history and mathematics, shall also give correlative importance to the natural, practical, and experimental sciences. In no country in the world is this question of such absorbing interest as in India, whose vast resources will never be fully developed until it is favorably solved by the Universities. Whether we turn our attention to commerce, agriculture, mining, or the arts, we cannot fail to see in their antiquated backwardness, ample room for the incorporation of practical and experimental scientific training in the schools fitting lads for passing the Entrance Examination of our Universities. And it is not too much to say that, if a fair share of encouragement were given to such teaching in our schools, in the fullness of time, the eventual development and growth of commerce, agriculture, mining, the arts, and manufactures would be so marked as to form an enduring monument of the greatness and benevolence of British Rule in this the fairest jewel in the Crown of our Gracious Majesty Queen Victoria.

JURISPRUDENCE AND LAW.

On Some Features of Litigation in Bengal.

BY THE HON'BLE J. B. PHEAR.

THE prevalence of a litigious spirit among the natives of this country, and unscrupulousness on the part of litigants in the use of vicious means to success, such as perjury and forgery, is a favourite topic with European writers in the periodicals of the present day. I do not desire to take part with either side in the controversy thus raised, though I consider it a very important one. I wish only to avail myself of the opportunity afforded by this Society for the purpose of drawing attention to certain matters which ought I think to be elements in the argument, and which have not, as it seems to me, hitherto received full consideration. These may be conveniently stated in the form of two separate assertions, namely:—

(1) There are in this country several sources from which proceed legitimate causes of suit, other than, and in addition to, those which exist in England.

(2) There is a want of aptness, or an imperfection, in the conduct of the process of trial in most Courts of first instance, which necessarily favors the prolongation of litigation, and fosters dishonesty and vicious laxity in the manipulation of evidence.

Under the first head I would comprehend

(a). The legislation of 1793, and the development of land rights thereafter, inclusive of the results of Act X of 1859.

(b). *Joint* family holding, coupled with *several* enjoyment of *undivided* shares, and with middle tenures.

(c). The number of trials which are open to the litigant by way of appeal in ordinary cases.

(d). The superposition of trial upon trial by the expansion of execution proceedings, and suits for mesne profits; the selling and assignment of decrees, carelessness of Courts in effecting sales, &c.

(e). The great variety of summary proceedings, which may in themselves be lengthy trials, but which determine no right, such as those under the Criminal Procedure Code, those relat-

ing to attachment, to intervenors under the land-law, to measuring land, &c.

(f). The prevalence of the benami system.

(g). The possession and exercise of full proprietary rights by purdanisheens.

(h). The vital necessity to the cultivating classes of a water supply, and the special circumstances which affect it in some parts of the country.

(i). The destructive and the recreative forces of the large rivers.

These several items, to a large extent, speak for themselves as they are read. But I propose to look a little closely at one or two of them. In the first place I will take (a) and (b), which together may be said to comprise the Bengal real property system.

The contrast which Bengal in this matter affords with England is very great. Both in England and in Bengal the conception which lies at the bottom of the land system is no doubt bipartite, yet it is markedly different in the two cases. In England there is the (for the time being) absolute owner of the soil of the one part, and the person who cultivates that soil, on the footing of a contract for the use of it, of the other. The relation between the parties which springs from this origin is exceedingly simple and definite; and the fact is that there is extremely little litigation between landlord and tenant in England. In Bengal, too, there is primarily one who has the right to make collections in respect of the land on the one side, and the cultivator, who pays the money, on the other: But the relation between zemindar and ryot has scarcely any real resemblance to, and is certainly not a repetition of, that of the modern landlord and tenant. And the circumstances which have surrounded the parties during the period of the English rule have been such as to produce a complex development and a conflict of rights which I suppose is almost without a parallel elsewhere.

Without staying now to inquire whether the zemindar in Mahomedan times was regarded as a hereditary landed proprietor, or to what extent he looked upon the land of his zemindary as belonging to himself (though I may remark in passing that the warmth which was exhibited in the discussion of these topics fifty years ago by such writers as C. W. Boughton Rouse, is at the present time somewhat amusing), I may venture to say positively that he never did, and he does not to this day, stand towards the ryot in the position which the English landlord occupies relative to his tenant. The area of his zemindary

covered large districts of country, and was reckoned not in *beegahs*, but in *communities* of men (*mouzahs*). The money-proceeds of the zemindary were not spoken of as rent, but as village collections (the *jumma* of the *mouzah*). The *assets* of a zemindary made up of the *jummas* of sub-tenures and of *mouzahs* very little resembled the *rental* of an English estate. The zemindar himself was a superior lord, enjoying personal privileges, and through officers exercising some powers of local administration. The population of the villages in his zemindary were his subjects (*ryots*). And it is not until you get within the *mouzah* itself that you find any one concerned with the actual land. How little the two cases of zemindar and landlord were parallel to each other in those older days may be perceived from a comparison which may be made even now. If an English landlord says, I have a fine estate in such and such a country, he mentally refers to the amount of the acreage, the fertility of the soil, the beauty of the landscape, and so on, not at all to the tenants, the laborers, or the dwelling-houses, which may be on the land; whereas if a zemindar makes a like remark, he has in his mind the number and importance of the villages, which form the zemindary, and their respective *jummas*, but he takes no thought about the actual land.

The zemindar made his collections in fact, by whatever right entitled to do so, through the means of a fiscal organization of simple character, which had its root in the village. Probably in the beginning the village community itself managed the matter of the allotment of land and the distribution of the liability to pay the zemindar's dues. But in Bengal, I imagine, that long before the English came to the country, the zemindar had got so much of that business, as custom had left free, into his hands. There was an office (or *kacheri*) in each *mouzah* with its head man (*chowdhery* or otherwise), an accountant, and a field officer. The business of these men was to keep a close eye on the *ryots*, to register in minute detail the subject of each man's occupation, the payments and cesses due from him according to shifting circumstances, and from time to time to collect the moneys, &c., so due. These duties, and the nature of the collections to be made, necessitated the keeping of numerous books and papers; and perhaps the system of zemindary accounts, which was developed under this exigency, is the most complete, though also at the same time the most cumbrous, ever devised by accountants. The *kacheris* of every five or six *mouzahs*, according to their size, were supervised by a superior officer (*daya tehsildar*) who had his own *kacheri*, with its books and papers.

either the duplicates of, or made up from, those of the mouzali kacheris. The collections effected by the officers of the village kacheris were handed over to him, and he passed them on to a next higher officer. In this manner the moneys at last arrived at the zemindar's own kacheri, and he paid them, after deducting such portion as he was for any reason entitled to retain, to the Government treasury as revenue. Of course zemindaries in the different parts of the country differed very much from each other in their extent and in their circumstances, and the foregoing description is possibly not absolutely true of any one. The particulars of the machinery of collection, no doubt, within certain small limits, varied a good deal. But I think that I have here sufficiently approached the type of the general system.

If so, it will be seen at once that the system, though simple and complete to the eye, had a natural tendency to disintegrate. Each middleman was the apex and head of a structure precisely like the principal structure in form and constitution, with this difference only that it had a smaller basis. An apparently slight disturbing force might serve either to detach it altogether, and leave it standing by itself, or put it into an appendant condition.

In the event, for instance, of the Government finding difficulty in obtaining from the zemindar all the money which it required, it might go direct to a middleman who was willing to make terms for his quota, and so would originate an example of a constituent portion of a zemindary being converted into a mehal paying revenue directly to Government. Also a zemindar, for motives arising from relationship, or from pecuniary or other obligation, might allow a middleman to retain and enjoy an exceptionally large proportion of the collections for his own benefit: might in fact leave to him the collections which centered in his hands, and be satisfied with the receipt from him of a jumma only. Thus would arise a dependent mehal paying a jumma to the zemindars, which might either be considered as part of the zemindary assets, or as revenue due to Government, but not payable directly. Again, some zemindaries, no doubt, as Mr. Hunter well describes in his "*Oissa*," lost their coherence actually at head-quarters, by reason of the head officials dividing the office management and care of the district between themselves, and so in the end coming to be recognized as the responsible heads of divisions.

In these various and other like ways, as I suppose, before the period of the English legislation, the original simplicity of the zemindary system had been lost; there were zemindaries and talooks of various orders and designations paying revenue direct-

ly to Government: within these were subordinate talooks and tenures converted from the condition of being parts of a homogeneous collecting machine into semi-independence, and paying a recognized jumma only to the superior kacheri instead of sending on to it their respective collections.

The practice of commuting collections or allowing them to drop into jummas was obviously so convenient and advantageous to the parties immediately concerned, that it was certain to grow and prevail in inverse proportion to the power or opportunities of the immediate superior or principal to insist upon an account. So that every subordinate jumma-paying melial or tenure, when established, speedily became a miniature zemindary, in which certain jummas were taken in lieu of collections, and the remaining collections were made by the old machinery.

Waste land grants or concessions have also been the origin of talooks both dependent and independent; and so too jaghir grants for services.

Within the village itself an analogous process, for much the same reason, came into operation with regard to the occupation of the land. The principal persons of the zemindary amla and the headman of the ryots (mandal) or others of influence, and privileged persons as Brahmans, often got recognized as holding upon fixed and favorable terms much larger portions of the village lands than they could actually or did cultivate. These of course they sub-let, either wholly or in part, and so arose varieties of jotes and ryottee tenures.

Much of the foregoing is no doubt scarcely better than hypothesis, but the results which it leads up to and explains constituted that which was the actually existing state of things in this country when the English came to it. The middle tenures, such as they were, depended for their maintenance upon usage and the personal power and influence of the holder; the ryottee tenures and jotes were regulated by usage also, and by the arbitrament of the village punchayet and the zemindary amla. Sir H. Maine has pointed out (in his "Village Communities," Section III) the true nature of customary law, upon the footing of which such a system works, and has shown that it does not involve the idea of a personal proprietary right. It was indeed the absence of this latter element which caused so much embarrassment and difficulty to the first English inquirers. They could not readily comprehend a land system, in which no one seemed to possess an absolute proprietary right to the soil. Still less could they understand how the due relation of the different parts of the system could be legitimately

maintained without express positive law. The ills and the confusing irregularities which were the results of somewhat rude attrition between feudal power and customary local authority, were only too apparent, and the first Indian Politico-Economists sought to remove them by simply making the (as they supposed) already existing personal rights of property more definite, and providing facilities for their enforcement by the arm of the law.

With substantially this view the legislation of 1793 was effected, and in order that no extrinsic disturbing force should remain, the amount of the Government claim upon the zemindars was fixed in perpetuity. The authors of the permanent settlement thought that they had thus freed the subject of property in land from incrustations which were merely the growth of a lawless time, and reduced it to its pristine proportions;

and they expected that the English arrangement of landlord and tenant, with all its simplicity and advantages, would assert itself at once. But in truth nothing in the world was less likely to happen than this. It could not happen until the zemindar or tenure-holder came to look upon himself as the owner of the soil, personally interested in and responsible for its physical condition: until the cultivator ceased to regard himself as ryot and acknowledged that he was only a contracting party. I need hardly say how remote these contingencies are even now. The agricultural system still presents us with the zemindar and ryot, not with landlord and tenant.

And the moment that the Legislature gave the zemindar a proprietary right in the soil, and this it did for the first time in 1793 (for according to the words of the preamble to Reg. II of 1793, "the property in the soil was never before formally declared to be vested in the landholders, nor were they allowed to transfer such rights as they did possess, or raise money upon the credit of their tenures without the previous sanction of Government")—that moment, obviously all subordinate tenures and holdings of whatever sort became also personal proprietary rights in the land of greater or less degree, each possessing, likewise in greater or less degree, powers of multiplication. When the zemindar's right had become in a certain sense an absolute right to the soil (not exclusive, because the Legislature also recognized rights on the side of the ryots) with complete powers of alienation, the rights of all subordinate holders were necessarily derivative therefrom; and the ascertainment, definition, and enforcement of them immediately fell within the province of the public Courts of Justice. Sir H.

Maine says (*Village Com.*, p. 73): "If I had to state what for the moment is the greatest change which has come over the people of India, and the change which has added most seriously to the difficulty of governing them, I should say it was the growth on all sides of the sense of individual legal rights—of a right not vested in the total group, but in the particular member of it aggrieved, who has become conscious that he may call in the arm of the State to force his neighbours to obey the ascertained rule." This change was deliberately and designedly made by the Legislature as regards the zemindar, but no one at the time perceived, and very few persons since have recognized that it also involved a like change with regard to every one, from zemindar to ryot, who had practically in any degree a beneficial interest in the land system. Even now, it is not uncommon to hear fall from well-informed persons expressions of regret that the forum of the mandal and the zemindar's amla should be so generally forsaken as it is for the kacheri of the Deputy Magistrate or of the Moonsiff. And yet this result was, as it seems to me, the inevitable consequence of the change effected in 1793. The first menace necessarily brought every member of the land system into the Civil Court to have his legal position authoritatively ascertained and asserted, and nowhere else could he afterwards go to have his proprietary right maintained.

A further most important consequence followed the change. As I have already remarked, all intermediate, even to the very lowest, interests became rights of property in land; and not only could the owner of any one carve it, as a subject of property, into other interests, by encumbering or aliening within the limits of the right, but even his ownership itself might be of that complex heterogeneous kind, which is seen in Hindu joint parcenary. Looking at the first of these two points, and remembering that a middle tenure resembles the primary zemindary, and is essentially the right to make collections from the cultivators of land, and to take the jummas payable by subordinate holders, within a specified area, upon payment of the proper jumma to the superior holder, we see that there must be a constant tendency to the creation of minor tenures. The owner of the tenure is severed from the land itself by the customary occupation of the ryots, and by the ryottee tenures; (indeed the ryot-holdings do seem in themselves to contain more of the English idea of land property than the middle tenures, although it is not always easy to draw the line which separates the two). The middle tenure is thus, in a great degree, an account-book matter,

and is very completely represented by the jumma-bandī paper. If the owner of such a property desires to benefit a relation or child, he may make him a makarari grant in some form or another of a portion of his collections. He may, for the purpose of raising money, do the same to a stranger in consideration of a bonus; again, he may do this in order to secure to himself the regular receipt of a portion of the money which he has to pay as his own jumma. Or he may, as security for a loan, pledge in the form of a temporary assignment by *zur-i-peshgi* *ticca* his own tenure-right of making collections. Whether he deals with his property in these modes, or in others, which might be mentioned, short of actual alienation (and this a Bengali never thinks of, if he can possibly avoid it), he necessarily creates fresh sets of proprietary rights. Turning now to the second point, we find that it is the rule, all but universal in Bengal, that every subject of property, including of course a middle tenure in land, is owned, not by an individual but by a more or less numerous group of persons jointly, each member of the group being entitled to a separate share in the subject of ownership, and such share being capable of existing in several more or less complete states of division from the rest. Each share, to whatever extent divided or undivided from the others, is to its respective shareholder a separate subject of property, which may be let, mortgaged, assigned, or otherwise dealt with by him as if it were an entirety.

Thus, as the direct result of the action which the Legislature took in 1793, when it converted zemindaries into private landed property, we have arrived in Bengal at a condition of complexity in landed interests, which, as I have said, I believe to be without a parallel elsewhere, and which is necessarily, by reason of the nature of the case, increasing under lapse of time. Out of this state of things a conflict of rights is constantly arising, which can be settled nowhere excepting in a Court of Law. The great bulk of the zemindary and middle tenure interests exists in the shape of undivided or partially divided shares in individual owners, and a large portion of the ryottee holdings are similarly circumstanced; and as long as this state of things prevails, there will always be, I imagine, to the Bengali fruitful cause of litigation without fault in himself.

I will mention as illustrative of this topic, that I find the subjects of suits in the first half a dozen special appeals, which stood in the list for admission to the High Court on a day taken at random a few weeks ago, were as follows:

- (1). Claim for a 2-anna odd pie share of a middle tenure

under an ikrarnamah of partition of property which was acquired while the family was joint. Answer, that the tenure was acquired with separate, not joint, funds.

(2). A vendee sought to obtain delivery of certain mouzahs purchased by him, and was resisted on the footing of a zur-i-peshgi lease covering an undivided 8-anna share, and alleged to have been granted by his vendor's ancestor.

(3). Claim for two mangoe trees standing on ground purchased by plaintiff. Defence, that the trees belonged to a shareholder of plaintiff's vendor, because they were planted by him when possession was joint.

(4). One member of a joint family complained that another member (a widow) had granted a lease of the whole joint property, and so ousted the others.

(5). An undivided shareholder of a village to the extent of $2\frac{1}{2}$ annas out of 5 annas sought to set aside a cultivating pottah granted by another shareholder.

(6). A cultivator sued to obtain ijmalli enjoyment of land amounting to 3 or 4 cottas, which he alleged had been taken exclusive possession of by a joint shareholder. Defence was, a former partition of the land, and exclusive possession thereunder of more than 12 years.

(7). Representatives, assignees, of one co-sharer claimed to be paid his aliquot portion of the rent by a subordinate tenant, who set up that he was not bound to pay in quotas.

And I have appended to this paper a copy of the schedule which specified the property claimed in a suit lately brought before me in regular appeal, because it conveniently affords an average sample of the condition at which interests in real property have arrived in Bengal.

I will not now dwell longer on this or any of the other topics of assertion No. 1, but will proceed to consider assertion No. 2.

The course of a trial between parties in an English Court of Justice is not an arbitrary proceeding; it must be pursued according to a somewhat strict rule which in all its parts is founded on reason, and has been dictated by the accumulated experience of many generations of highly trained men.

In the first place, the case of each litigant party must be stated clearly and concisely in writing. From these statements the questions of fact or law, upon which the parties are at issue, should be singly framed. By this means the parties are informed of the points which they are respectively called upon to establish or to meet by evidence.

The trial, properly speaking,—i.e., the hearing of argument

on behalf of the parties, and the taking of evidence,—commences after the issues have been definitely fixed, and it is *most important* that it should be carried on continuously without a break before the same Judge until it is ended.

The order of the trial is, as a rule, that the party upon whom the burden of commencing falls, states his case, and produces *all* his evidence; then the opposite party or parties answers, and also, if necessary, states a counter-case and produces *all* his evidence; and finally the first party replies. Upon the *evidence* thus brought before it, the Court, aided by the discussion which has taken place, arrives at a conclusion as to the facts, and pronounces its judicial decision between the parties.

The primary purpose of the trial is that the Court should be clearly and correctly informed as to the relevant facts. Every precaution therefore must be taken to ensure that the evidence should bear upon those facts alone which satisfy this condition, and also should be the best available for the purpose of manifesting them. And in furtherance of this purpose, each party must have the fullest opportunity of objecting to, interpreting, explaining, or rebutting all evidence which is to be used against him.

Now all evidence of facts which have occurred may be put into one of two groups,—namely, either the testimony of witnesses relative to facts, which they have personally perceived, or all other evidence, of which the principal is that afforded by written documents.

The principle just enunciated leads to this immediate consequence,—namely, that no evidence belonging to the second group, which is not admitted by the party affected by it, should be used as evidence against him, until it is shown to be legitimate evidence as against him by the testimony of living witnesses,—*viz.*, until such facts with regard to it are proved by this testimony, as cause it to be legitimate evidence, and until he has had opportunity of explaining them. The principle also renders imperative a certain order in the examination of every witness. The party on whose behalf he is called must first elicit from him, by a series of non-leading questions, *all* the facts to which he can speak from personal perception, and which are relevant to the examiner's side of the case, including in them any facts which serve to make evidence of the documents intended to be used against the other side; also under certain circumstances the examiner must, in the same manner, get him to explain or controvert facts put forward by the other side. This is *examination-in-chief*, and is perhaps the most difficult part of an

advocate's duty. Next, the opposite side, with which it is to be presumed as a rule the witness has no sympathy, cross-examines him; and this is so much the easier of performance, because the examiner is not necessarily confined to questions which do not lead to the answer. The object of the cross-examination is manifold, as for instance, (a) to impeach the credit of the witness as a witness of truth; (b) to reduce his statements to their proper proportions, as the results of personal observation; (c) to bring out countervailing facts and facts favorable to the cross-examiner's side; (d) to give the witness the opportunity of answering and explaining relevant facts belonging to the cross-examiner's side, with which he has any concern. Finally, the first side re-examines, —i. e., without leading questions he gets the witness to place the newly elicited facts in the most favorable light for his side.

It is plain that the foregoing rules need for their effective operation that the persons charged with the duty of examining on behalf of the respective opposing parties should thoroughly know the case of these parties and the facts which the witnesses can depose to, and every question, or omission to question, must be attributed to the exercise of a discretion founded on that knowledge. When these conditions are satisfied, it may be safely asserted that the English mode of trial leads with much economy of time and a considerable degree of certainty to the facts, which may be depended upon *inter partes*.

All the Civil Courts in India conduct trials of questions of fact *inter partes* after the English manner. But it may certainly be averred that they never observe the WHOLE of the precautions which tribunals in England find it necessary to observe in order to reach the facts of a case, and I am afraid it must be said that they *generally* disregard the most important of them.

For example, it not seldom happens that the Judge who passes the decision in the Court of first instance is not the Judge who saw the witnesses give their testimony. Lately, a case came under my notice in which *four* Judges were concerned in the trial between the fixing of issues and the delivering of judgment; also a case in which there were in like manner as many as five—one had settled the issues, another had heard the case opened on behalf of one side, and taken the depositions of two or three witnesses, and so on, and the last determined the matter on perusal of the documents and depositions which his predecessors had in this way got together. Of course, under such circumstances as these, the judgment of the primary Court has been altogether unaided by that which is truly the surest of all guides to the truth between the parties,—namely, intelligent observ-

ation of the demeanour of witnesses under proper examination, and of the course of the trial. In most cases, though no doubt not in all, it is the unnecessarily protracted duration of the trial-proceedings which gives rise to the occurrence of a succession of Judges. Now, a trial, which is carried on, so to speak, by bits, after intervals of time, even if the whole of it take place before the same Judge, is a most illusory affair: as compared with a proper trial, it abounds with facilities for cloaking and coloring facts, and is deficient in testing apparatus. It is liable to degenerate into a struggle for advantage in which the most unscrupulous and influential has the best chance of winning. And for this reason, where the practice prevails, there must, I apprehend, follow a demoralization of tone in the public feeling with regard to litigation. It cannot be too often repeated that the purity and the completeness of an English trial depends in large measure upon its being effected in one continuous sitting, and perhaps the most important element in it is the frank discussion by the parties face to face of the manner and the matter of the witnesses' testimony, following promptly upon its delivery at the closing of each side's case. Unfortunately, however, from various causes, the true value of oral evidence is not yet understood in Indian Courts, and little heed is paid to this part of the trial.

Also the art of examining is almost entirely unknown. I may say that it is essential both in examination and cross-examination that the testimony of the witness should be elicited by one who is well informed as to his own case, and therefore knows the material points upon which the witness can speak. So little is this regarded in India, that it is most common for the presiding Judge, who is necessarily ignorant of the original facts on either side, to conduct the principal part of the examination-in-chief of every witness! The reason usually given for this practice is that it affords the only means of preventing leading questions. But whether this be so or not (and I should say not), it seems to escape the notice of Judges that the results are just as vicious as would be those of leading questions. The vagueness, deficiency, and stereotyped form of the testimony-in-chief given by Judge-examined witnesses is generally such as to render it quite valueless. As a consequence of this practice, and also of ignorance of their business on the part of advocates in the Mofussil Courts, it is generally almost impossible to gather from a deposition whether a witness speaks to facts as of his own perception or not. And secondary and remote facts are brought out and fought over instead of the primary and immediate. It is difficult to give a

true view of the extent to which this prevails to any one who has had no personal experience of it.

I need hardly say that, if so little is known of proper examination-in-chief, almost less is known of cross-examination. This, such as it is, is generally confined to some feeble efforts at impeaching the witnesses' credit,—*i. e.*, to questions as to whether the witness is a relation or dependent of the party on whose side he appears, or whether he is not a professional witness, and so on; there is never any real attempt to cut down the evidence to the limits of personal observation, and seldom any to bring out favorable facts. And in no instance whatever have I seen a trace of consciousness in the cross-examiner of the obligation under which he lies, to disclose to the witness everything in which it was the intention of the other side to implicate him. I suppose no mofussil vakeel ever put a document into the hand of his opponent's witness to enable him to give an explanation with regard to it. Yet this cross-testing of evidence, questioning of the witness of one side upon that which is said, or to be said, by the witnesses of the other, is of the essence of the trial-machinery.

Lastly, the mode in which documents are dealt with as evidence is most unsafe and apt to be misleading. In supposed pursuance of the provisions of the Civil Procedure Code, the parties *file* before trial almost all the documents which they propose to use at the trial; and it is the habit of the Courts to refer to any document so filed as if it were thereby made evidence without further proof. An Appeal Court will frequently, upon the footing of a document which it finds filed although it was never mentioned at the original trial, reverse the decision of the first Court! Now, it seems to be manifest without argument that no one's cause ought to be affected by evidence which he has had no opportunity of testing or refuting. Therefore, in order to render a document evidence it must be put forward at the trial in the presence of the opposite party, and unless its admissibility be then agreed to by him, it must be validated by the proof of such facts as suffice to make it admissible; and further, the opposite party must also be afforded fair opportunity of canvassing this proof and impeaching the effect of the document. To take a simple instance, if a ryot, sued by his zemindar for rent, relies upon a dakhila, or dakhilas, or farkhati signed by the zemindar's patwarri or other amla, his advocate should put the document into the hand of the gomastah or other principal witness of the plaintiff, and especially into the hands of the alleged signor (if he is called), and in the event of its not being then admitted, he

must give such testimony in support of its authenticity as he can independently, and this must be subjected to cross-examination before the dakhilas, &c., can be taken as evidence.

Not long ago, the highest authority in Bengal said in the most august assembly of India, that our judicial system is "rotten to the core." I think this expression is too strong. Our Judges, both European and Native, especially the latter, are in my opinion very respectable theoretical lawyers. On pure questions of law, their determinations are usually very correct. But by reason of want of information and training, they are generally deficient in the power of efficiently working the machinery of trial. They are unable to secure the production of evidence in a form which shall carry with it the means of gauging its value. It rarely happens that a record comes under my notice which does not afford an example of the total disregard by one or both litigant parties of the best and immediate evidence bearing on the cardinal points, and of the attribution to unproved documents of a false value. And I am forced to the belief that, in the majority of cases, the view of the facts upon which the decision rests is not accurate, often not even approximately so. All parties feel this, and the consequence necessarily is, appeal upon appeal as far as appeal will go. But of course, appeal does not really mend the matter: the Appeal Court has it even less in its power than the first Court to extract the actual grains of fact from the mound of chaff in the shape of opinion, hearsay, and second-hand matter, which appears on the record, stated as if it were the immediate result of observation. It is painful to me in the extreme to observe that almost universally neither party to the suit seeks to elicit the primary facts upon which the case turns, and the Court never thinks of compelling them to do so. As an example, I may refer to a suit of considerable importance within my knowledge, in which the principal feature of the plaintiff's case was, that he and his predecessors in title had for eighteen years been in uninterrupted enjoyment of a 4-anna share of a certain mouzah: of the defendant, that he and his predecessors had been for the same time in uninterrupted enjoyment of that same 4-anna share together with another 4-anna, making eight annas in all. Now, one would think that here was a governing issue of fact between the contending parties which admitted of being proved the one way or the other in the most satisfactory manner. The collections must have gone to some body during those long years, and their course could have been traced with absolute precision. The parties were rich, and the contest well fought. A cloud of witnesses were called on

both sides, ryots, tehsildars, gomastahs, patwarries, ticcadars, and yet (it seems scarcely credible) not one of them was either on examination or cross-examination made to state the occurrence within his observation of a single specific fact with regard to the collections and the payment of them. Not a ryot was made to say to whom he paid his rent during the different periods of time, not an amla was asked to state his practice during those years in making the collection, and to show by his books what he did with the money. Not a single witness was cross-examined relative to counter-statements affecting his own statements or as to the situation of witnesses on opposite side. In the end the case came to be decided pretty much upon some such material as the following, heaped up on both sides alike:—

“I know that the plaintiff and his ancestors have all along from before possessed a 4-anna share of the property in dispute. I and my father have, for the last seven years, cultivated three beegahs two cottas in Mouzah therefore I know. Last year I paid rent to patwarri A. B., before that to C. D.

“I was appointed patwarri of mouzah seven or eight years ago. Tehsildar E. F. appointed me. Plaintiff and his ancestors have all along been possessed of a 4-anna share. I have books. I left them at home. I have filed copies of jumma-bandi papers for the years — and—. My brother made them. He is dead.”

It is obvious that any amount of stuff of this character affords no real guide to the specific facts which require to be ascertained.

I could repeat examples of this sort almost without end. In a comparatively unimportant suit the question was, to what share of ijmali property was the plaintiff (a widow) entitled; and everything turned upon the distribution of the collections which had obtained. I give an abstract of the depositions made by the witnesses for the plaintiff:—

No. 1. Plaintiff has a 3-anna odd share. I hold a howladari tenure. I pay 1 anna odd to the 16-anna malick. Don't know how much to plaintiff.

No. 2. I know disputed land. Plaintiff owns 3 annas and odd, &c., &c. I saw a ryot, who is gone to another zemindary, make up accounts according to that share. I saw gomastah realize for plaintiff according to that share.

No. 3. Plaintiff is in possession of 3-anna odd share by receipt of rents according to inheritance, &c. I collected, and so can say. Plaintiff is in possession of the disputed land.

No. 4. Plaintiff realized 3 annas odd from my brother. I know that.

No. 5. Plaintiff has 3-anna odd share. I live in another part of the talook, and therefore I know she holds that share. She has possession by receipt of rent.

The witnesses of the other side spoke in like fashion, so that the real point of the case was never touched in any way, and the determination of the issue between the parties was little better than guess-work on the part of the Court prompted by apparent probability.

It is often said that in India the parties of design avoid the critical facts, and that the Courts are not in fault in this matter. But this appears to me very much of the nature of the workman's excuse when he quarrels with his tools. And the truth is that in both the cases I have instanced, and in almost every other case that I have yet known during an experience of nearly nine years, the witnesses before the Court could have given valuable evidence directly in point, if they had been properly examined and would have done so, had the Court known its business and done its duty. Indeed, how far the Courts generally are from understanding the true meaning and object of trial procedure may be perceived from such a fact as the following, namely:—A question is put to a witness by way of cross-examination, and the Court overrules it on the ground that, "as this witness is not a witness on this subject, the question cannot be put." Instances of this kind are continually occurring, furnished as well by English as by native Judges. The misleading cause, no doubt, is that a party, applying for a summons to a witness, is obliged to specify the part of his case, which he desires the witness to support.

I will however give an instance of a trial effectively had in the mofussil under somewhat exceptional circumstances. The plaintiff was a shareholder of a certain tenure, and sued a ryot, one A, for his share of the rent, alleged to be payable according to the nature of the crop grown, and due say, for the years 1276 and 1277 F. S. The plaintiff's gomastah deposed somewhat as follows:—

"Ever since 1273, I have seen defendant holding and cultivating the lands.

"These lands have continued unchanged; they pay rent according to the crop:

Rs.	As.	P.	
0	13	0	for amun and aus (rice).
0	9	6	mustard seed.
0	6	6	cheena.
1	2	0	safflower.

"Amins go and see each crop. One goes in Joistee, another in Agrahun, and notes in writing what has been raised in each field.

"The hissab has not been filed.

"Paddy is sown, some in Falgoon or Magh, and the rest in Kartik.

"Mustard in Agrahun, and is cut in Falgoon.

"Maskalye is sown while the paddy is growing, or afterwards, and is cut, &c.

"Safflower is sown in Kartik or Agrahun, and is gathered in Falgoon.

"I don't remember what were the crops raised on A's (defendant's) land in 1276 or 1277.

"The rent-account according to crops is made by amla with the ryots for the past year at the beginning of the next.

"Defendant made up the account for the three years in Bysakh 1278.

"I made the account on behalf of the zemindar.

"It was made from the chittas, which were written by the amins in Joistee and Agrahun.

"By that chitta 4 rupees 4 annas became due from A (defendant) for the three years for plaintiff's share."

This witness was carefully cross-examined, and made to distinguish the material facts to which he could venture to speak as of his own personal observation from the rest, and these reduced themselves pretty well to this, — namely, that the defendant in witness's presence inspected the amin's chittas, and agreed that 4 rupees 4 annas was due from him on the footing of them to the plaintiff. He was made to give his reasons for the non-production of the amins, of their chittas, and of the proper account which defendant had agreed to, for none of these were produced; and also to describe the principal circumstances in regard to time, place, and occurrence under which the agreement was come to on the part of the defendant.

Witnesses (three or four) were called to corroborate the go-mashta as to the customary rates of rent according to crops payable for lands, such as the lands held by the defendant, and also as to the alleged settlement of accounts come to by the defendant, the latter being the cardinal point of the case as it was shaped by the plaintiff. These, too, were each carefully cross-examined and got to detail the facts relative to the stating of accounts. Their stories proved in the end to be hopelessly discordant; and further, on being presented with the versions of their colleagues, they boldly contradicted them in more than one

particular; so that it became unmistakably apparent that these men never had been present at any settlement of accounts by the defendant, such as they were brought to prove, and the plaintiff's case was fictitious on the showing of his own witnesses. And in truth no suit would ever have been brought on such a basis as this was, had the party any reason to anticipate that his evidence would have been subject to the process of analysis and sifting which it had to undergo: for although an *alibi* may, for want of something better, be relied upon alone as matter of defence, no man in his senses would make a like foundation his sole ground of suit. On the other hand, had this evidence in this case been taken in the ordinary fashion, the depositions on the two sides would have looked equally well, and have been equally vague; and the Court, in order to decide between them, would have been driven to the expedient of taking some accidental criterion, such as apparent respectability of witness and so on.*

The mischief resulting from the inefficient examination of witnesses and conduct of the trial does not end with the element of uncertainty which it introduces into the case tried. The morality of the community is in a measure affected by it. When the testimony of witnesses is not pinned at once to definite statements of facts of observation, and subjected to collateral tests of accuracy, an opening is afforded for dishonest assertions, which is certain to be availed of. In England, every lawyer too well knows the difference in the trustworthiness of an affidavit couched in guarded language, and conveying, promiscuously, matters of observation, information, and belief, and that of a deposition made in open Court, and forced to be direct and relevant. Also the difference in the honesty of the evidence

* We may assume as a not improbable reason for the plaintiff bringing this, so to speak, fictitious suit, that he had some three or four years before bought a share of the mouzah at an execution-sale as a speculation: that he had failed to get hold of the collection papers or books, or other necessary information, and was driven as a stranger to all sorts of expedients for the purpose of obtaining from the ryots his share of the payments due from them. Possibly, too, there was some special ground of doubt as to the defendant's liability; the land cultivated by him might lie near the boundary limits of the mouzah, or he might have been accustomed to pay solely to one shareholder, and not in quotas to the several shareholders. Thus circumstanced, the plaintiff came into Court on a case, which was generally true in all its principal features, and which was only untrue in one small critical point. Therefore, as trials are usually had and carried out, he had every chance of success, for on his side was the respectability of position, and the *a priori* probable justness of demand which Indian Courts are prompt to recognize; but if trials were commonly had and carried out as they ought to be, such a suit would never have been risked. It must be remembered that a judgment in his favor, by whatever means obtained, would have been *pro tanto* simply a reduction into possession of his purchased property.

given in trials, such as those denominated running down cases, breach of warranty cases, and so on, where the facts in issue are of a character to render a conviction for perjury impossible, and that of the evidence in ordinary cases, where the facts admit of being tolerably well ascertained. It is, therefore, I think for all reasons a most serious consequence of the crude and imperfect way in which trials of first instance are effected in the mofussil, that a witness however false can seldom, or never, be shown to be guilty of perjury on a material fact. The drift of a witness's testimony (nay the very fact that he stands forward to give evidence at all) may be falseness itself, and yet as evidence is taken, there may not be, and generally is not, in it a single statement of material definite fact which can by any possibility be demonstrated to be untrue to his knowledge. Of course, this circumstance of itself serves to show that the Court which took the evidence was incompetent to its first duty, but the result remains. However, the loose practice, which is universal in the reception of, and the dealing with, documents, is even more fruitful still in mischief. When a document may be used, and almost certainly will be, if used at all, without any one being called upon to authenticate it by testimony as to its origin and history, an opening for dishonesty exists, which it is difficult to over-estimate. And one is literally lost in amazement at finding it to be the case that a practice of such sort obtains with tribunals which make it their habit to slight oral testimony and to depend almost solely on documents. The great evil growing out of the foregoing causes is apparent enough. It is variously attributed to the invincible untruthfulness of the native character, the rascality of the mookhtars, the technicalities of the English trial system, and so on. The Courts now and then attack it in a most frantic way by charging and convicting an unfortunate witness of perjury on a collateral point, as for instance that he swore he was no relation of the plaintiff, whereas he was his cousin-brother; or by prosecuting a mookhtar for filing a document knowing it to be a fabricated document, and with the intention of its being used as evidence. But I see no indication anywhere that the perception of the evil has taught the Courts the proper lesson.

Imperfect complaints which, whether of design or otherwise, do not disclose a complete cause of action, and issues raised on collateral matter or vaguely or ambiguously framed, are fertile in grounds of appeal and of remand, and I need hardly say that these faults are entirely within the control of the Courts themselves.

I commenced this paper with the purpose of pointing out and describing some not very generally recognized causes of a common subject of complaint, and I trust I have sufficiently effected my object. In the pursuit of it, matters have been touched upon at the last, the consideration of which leads, as it seems to me, unavoidably to the conclusion that the Civil Courts of this country as yet very imperfectly know that part of their business which concerns the trial of questions of fact; and that the advocates who practise in them perhaps know it still less. If this be so, an interesting question suggests itself,—namely, how has it happened in this instance that the teaching of experience has been so little effective? I think I could furnish an adequate answer; I think also that I could indicate the direction in which a remedy should be sought. But the limits of my paper have been reached, and there is no place in it for these topics.

APPENDIX.

Detail of Property claimed.

Description.	Extent of Share.		Revenue and Proceeds of the Lands.		
	As.	K.	Rs.	As.	P.
Mouzah Bela, Pergunnah Khund	16	0	180	0	0
Mouzah Osmaupore, Pergunnah Furrokhporc ...	8	9	68	0	0
Mouzah Coochkerpore, Pergunnah Bunkee ...	6	7	16	0	0
Mouzah Hurnapore, Pergunnah Bunoor ...	1	0	15	8	0
Mouzah Surootee, Pergunnah Yahyea... ..	1½	0	15	0	0
Mouzah Jhendora, Pergunnah Yahyea ...	0	0	150	0	0
MEHAL SURSHEKUN.					
Mokurrury lands of Mouzah Raghonuggur Deb, Pergunnah Bekrumpore	Bgs. 200	0	106	0	0
Mokurrury lands of Mouzah Subnarpore, Pergunnah Bazeednuggur	7	0	5	0	0
Inamee lands of Mouzah Subnarpore, Pergunnah-Bazeednuggur	25	0	15	8	0
Inamee lands of Mouzah Soongurea, Pergunnah Yahyea	11	0	10	0	10
Inamee and purchased lands of Mouzah Bellarohce, Pergunnah Bazeednuggur	6	0	4	8	0
Inamee lands included in the area of Mouzah Burdaha, Pergunnah Chedy	6	0	3	0	0
Inamee lands included in Mouzah Rughowaree, Pergunnah Poker	6	0	3	0	0
Inamee lands of Mouzah Baharpore, Pergunnah Yahyea	5	10	3	0	0
Inamee lands within the area of Mouzah Kurooha, Pergunnah Alapore	11	0	10	0	0
Inamee lands within the area of Mouzah Mahurbul, Pergunnah Gopalpore	2	10	3	0	0
Inamee lands within the area of Mouzah Cheditbunnee, Pergunnah Dhurpore	5	10	3	0	0
Purchased lakhraj lands within the area of Mouzah Soket, Pergunnah Bunoor	5	0	4	0	0
Purchased lakhraj lands within the area of Mouzah Gedhunpore, Pergunnah Bunoor	12	10	2	0	0
Total ... ..	.....		.....

DISCUSSION.

THE Lieutenant-Governor would venture the remark that the Society would do greater justice to great subjects and to the distinguished authors of such papers as they had heard, and would exercise a much greater influence, if they would not try to crowd two such subjects into one Meeting. His friend, Mr. Geoghegan, had read a most interesting paper, which would have afforded the fullest scope for an evening's discussion; but feeling that another was coming after him, he seemed to be reading against time, and no discussion was possible. Then, far too late came a man, of the great position and authority of Mr. Justice Phear, to read a paper on a subject above all others interesting to the people of this country, and he also was obliged to skip somewhat.

The Lieutenant-Governor then dwelt on the obligation the company and the country were under to Mr. Phear. No man was more competent to speak with great weight on such a subject, and all who heard him had been deeply interested. Mr. Phear had quoted some hasty words of his (the Lieutenant-Governor's) when he said that the Civil Courts of the country were *rotten to the core*. That expression was hastily uttered without consideration, but the more he heard from men better qualified to pronounce an opinion, the more he was inclined to think that he was not so very wide of the mark after all. Then Mr. Phear said that the Courts had considerable legal acquirements. No doubt, there was a good deal of law about—perhaps too much law—but he thought—and Mr. Phear flatly told them—there was very little fact in the Courts of the country. Law without facts was worse than useless. In truth, qualified and educated and literate as their lawyers, their advocates, and their Judges might be, not one of them had the least idea what it was to examine a witness and sift the facts in a proper manner. They looked to law and precedents, and let the facts take care of themselves. If that was so, as Mr. Justice Phear, after a long experience, told them it was, what were the Courts but rotten? He trusted the many accomplished men engaged in the legal profession would take this to heart, and would remember that the great thing is to get at the facts;—the law is the mere binding of the book, the facts are the contents inside. If competent men would improve the present rotten state of things, they must give all their efforts to improve in this direction. He hoped the lecture they had heard would be printed and circulated, and that many would study it and benefit by it.

BABU SHITUL CHUNDER MOOKERJEE next spoke as follows:—

MR. CHAIRMAN AND GENTLEMEN,—I have listened to the paper read by the Hon'ble Mr. Justice Phear with very great interest. Having been connected with the Civil Courts in Bengal during the past eight years, I feel called upon to say something on the subject from my own experience. It is not my intention to trouble you with a long speech at this late hour. I will only make a few remarks on one or two salient points.

In the first part of his paper, Mr. Justice Phear has very ably traced the principal causes which give rise to litigation in Bengal. It is true that the Real Property System, the Joint Family System, and the Benamie System prevalent in our country are perennial sources which supply the Civil Courts with law suits. But in addition to these causes there is something in the life of

the people themselves, and in the state of society in which they live and move, that gives rise to litigation. Agriculture is the chief occupation of the rural population in Bengal. When the crop has been sown and reaped, their life becomes very dull and almost unendurable. There is no intellectual excitement among them. Unlike the farmers and working classes in England, they cannot discuss the current topics of the day or feel any interest in them. While a cabman there works himself well-informed of what goes on in Parliament, the Bengali middleman or under-tenant in the remote mofussil has not the slightest idea about the constitution of the Government under which he lives. His thoughts and views run within a very limited groove. In the cultivating season the lower orders work in the fields, and the upper classes look after the cultivation of their lands by hired laborers. When the crop is harvested, want of occupation makes their life very dull, and they have recourse to a Court of Justice on some flimsy pretext. Generally speaking, there are two parties in a village, and the people are ranged on one side or the other. As long as the case lasts there is great excitement in the village, and the people discuss with keen interest what goes on in the Court every day. I am thoroughly convinced that if the rural population of Bengal had any intellectual or sporting excitement among them, they would resort to Courts of Justice much less frequently than they do at present.

Again, the state of public opinion in the country, I am sorry to say, greatly fosters the prevalence of litigious spirit among the people. A person does not scruple to prefer a false suit, and does not hesitate to adopt all foul means in his power to win it. Should he have recourse to perjury or forgery to substantiate his claim, public opinion does not touch him in any way, and he does not lose in the estimation of his fellow-men. The case in England and other enlightened countries is different. I have no doubt that all vexatious and false suits will be stopped in Bengal when a healthy public opinion springs up and checks the resort to perjury and forgery in litigation by the infliction of heavy social penalties.

With regard to the second part of Mr. Justice Phear's paper in which he gives such a vivid description of the way in which suits are tried in Courts of first instance in Bengal, I must confess that there is a great deal of truth in all that he has said. If suits were properly tried in those Courts, there would be a large decrease in the number of appeals. It is notorious that great laxity prevails in the Lower Courts in regard to the reception of documentary evidence and the examination of witnesses. Even plaints and written statements are not properly examined when they are presented. The other day a case came to my notice in which the presiding Judge, when about to pronounce judgment, found out that the plaint had not been verified in the manner prescribed by law. Documents are not inspected when they are produced by parties, and the consequence is that several exhibits are filed which have no bearing upon the matters at issue, and which are otherwise inadmissible in evidence. Then again in most Courts of first instance the way in which witnesses are examined is opposed to all principles of the law of evidence. It will, however, be unjust to hold the Courts alone responsible for this state of things. They are so overworked that it is impossible for them to do their work properly. They cannot devote unlimited time to the decision of any single case. They are required to dispose of all cases within certain fixed periods, and to furnish explanations of the cause of delay when this cannot be done. The superior authorities attach great importance to the exhibition of clear files in the Business Statements of the Subordinate Courts, and the Subordinate Judges and Moonsiffs exert their best to dispose of as many cases as they can. It is well known that those officers are exceedingly over-worked in Bengal, and

it is impossible for them to devote that amount of care and attention to each case, which they should and would do. The Moonsiffs labor under another great disadvantage. There is no educated Bar to help them. The Pleaders who conduct cases in the Moonsiffs' Courts oftentimes defeat, rather than help, the ends of justice. As long as the Bar of the Moonsiffs' Courts is not improved, and the Subordinate Judicial Officers are relieved from excessive work, the evils which have been so ably exposed by Mr. Justice Phear in the second part of his paper will not be removed.

Dr. Ewart said, with reference to what had been observed by His Honor the Lieutenant-Governor, that it had not been at all unusual, according to his experience, for the Association to adjourn discussions. If, therefore, the gentlemen who have just favored us with two such admirable papers, or this Meeting, wish for such an adjournment, he would be happy to conform to their wishes, and appoint some convenient time and place for this purpose. His own opinion was that Mr. Geoghegan's paper on *Emigration* was so moderate, exhaustive, and masterly, that it left little room for discussion. In regard to the Hon'ble Mr. Justice Phear's paper, he was not so competent to give an opinion; but, on first impression, it did seem to him that it contained abundance of valuable matter for discussion.

Further discussion not having been demanded either by the author of the papers or the Meeting, the proceedings were brought to a close.

EDUCATION.

Some University Matters.

BY BABU CHUNDER NATH BOSE, M.A.

UPWARDS of four years ago, I had the honor of reading before this Association portion of a paper entitled "The Present System of Education in the University of Calcutta," which has been published in Part II, Vol. II, of our "Transactions." But although four years have elapsed since that paper was read, and several changes have been made during the interval in the course of studies in the Calcutta University, the necessity of considering some of the points which I then discussed is, perhaps, greater at the present moment than it was when the changes spoken of had not taken place. But before entering upon this discussion, I think it proper to consider the value of a remark which is frequently made with reference to the University, *viz.*, that, being simply an examining body, it is very little responsible for the defects of culture which are displayed by the young men upon whom it bestows honors and diplomas with a lavish hand year after year. In the course of the discussion which took place upon the reading of my aforesaid paper—

"The Rev. K. M. Banerjea said that, in his opinion, several of the points discussed by the lecturer were worthy of serious consideration. He did not, however, think it proper to consider the University of Calcutta responsible for all the defects of education which had been noticed by the lecturer. The University, said he, is still an infant institution, and is only an examining body, having little or nothing to do with the task of *instruction*. The University only fixes certain courses of study, and is certainly so far responsible. But it is the different schools and colleges which actually teach those courses; and therefore whatever results, good or bad, arise from their study are to be mainly attributed to the manner of working of those schools and colleges and not to the University."

This is a very authoritative opinion; for the Rev. K. M. Banerjea, besides being a man of large experience and still larger erudition, was, at the particular time when he expressed it, President of the Faculty of Arts of the Calcutta University.

He does not indeed deny, in so many words, that the University is to blame in any measure, however small, for the defects of culture noticeable in our educated countrymen; but when he says that "the University only fixes particular courses of study and is certainly so far responsible," and further on, "whatever results, good or bad, arise from the study of the courses fixed by the University are to be mainly attributed to the manner of working of the schools and colleges and not to the University," he seems evidently to under-rate the influence which that institution exercises upon the *education* of our youth. Books are the materials upon which instruction in our colleges and schools is exclusively based, and the nature of the culture resulting from that instruction must be in an essential degree determined by the quality of the books studied by our boys. The manner in which instruction is given has very great influence, no doubt, on the resulting culture; but it is equally true that the method and ultimate effect of instruction itself are largely dependent upon the order in which books are required to be studied. To illustrate both these propositions:—Suppose a person puts his son for education under a tutor, but reserves to himself the selection of the books in which he is to be taught; and if, having done this, he commands the tutor to confine himself only to such works as the *Mysteries of London*, and the son turns out in a few years a consummate rake, should this effect be attributed to the *tutor*? And, secondly, if you attempt to teach Algebra before Arithmetic, or Trigonometry before Geometry, your teaching, however earnest and painstaking, must be a failure. But, after all, although the Rev. K. M. Banerjea would attribute all the effects, good or bad, of the present system of education to our schools and colleges, we are pretty much accustomed to the spectacle of the University appropriating to itself year after year, through its Vice-Chancellor, every particle of the credit which attaches to the little good that we derive from that system!

But whatever view may be taken of the amount of responsibility attaching to the University for fixing certain courses of study, there can be no doubt that the responsibility of the examination affair is all its own. When the Rev. K. M. Banerjea says that the University is "*only* an examining body," he seems to make light of this second responsibility, when, in fact, it is one of a most serious nature. Here is a student reading Mr. Mills' *Treatise on Logic*, but fully aware that he would be examined solely in Mr. Mills' grammar and diction and style. In such a case, his knowledge of the rules and principles of

logic will not be a whit less profound than if he had been reading simply one of Scott's or Dickens' novels. And the manner in which the examinations of the Calcutta University have been hitherto conducted has produced effects of a closely analogous nature. To make a personal confession—when I was reading for the First Arts diploma and the B.A. degree, I utterly neglected English composition and the study of the great rules of Syntax, and being fully convinced by a reference to the questions on grammar and literature set at preceding examinations that it would be sheer folly to pay any attention to those subjects, I devoted myself exclusively to the study of such precious grammatical antiquities as the history of the pronoun 'its' and such idiomatic niceties as the distinction between "a madhouse" and "a mad house." But there is the University itself to speak to the influence of the Examiner on the method of study and instruction. The Hon'ble Mr. Markby having in the year 1870 submitted to the Faculty of Law a minute proposing certain alterations in the course of studies till then existing for the B.L. Degree Examination, a sub-committee consisting of the President of the Faculty and Messrs. Markby and Dwarka Nath Mitter was appointed for the purpose of considering and reporting upon those proposals. And the report which was thereupon submitted contained the following observations:—

"With regard to the English law of real property, we think it ought to be altogether excluded. It now occupies even a larger space in the course in reality than it does in appearance. It forms the principal subject of the lectures of the second year in the Presidency College. It almost invariably covers a very large portion of one of the papers in the examination. The questions upon it can nearly always be answered out of Williams' Real Property, a book of moderate dimensions and not very expensive. The consequence is, we believe, that a very large portion of the student's time is now spent in getting off Williams' work by heart.

On the other hand, the whole of the Hindú and Mahomedan law of property and succession is placed by the lecturers at the Presidency College with a mass of other subjects in the third year of the course; and in so dealing with these important topics, they are acting in perfect accordance with the relative space devoted to them in the examination."

In other words, the fundamental object of the University in holding examinations in law—which is to impart to the Indian youth such a legal training as might enable them to be

good practitioners of law in the *Indian Courts* or good *Indian Judges and Magistrates*—was being materially frustrated by the Examiner's rating the English law of Real Property far above the Hindú and Mahomedan law. Nothing need be said after this.

To come, then, to the particular points which I intend to discuss in this paper. It has been hitherto a very general complaint that the young men who are brought up under the University system cannot write or speak English with even tolerable accuracy. There is no doubt much truth in this complaint. But the measure which the University has recently taken to remove this defect seems to be of a truly vengeful character. That measure is explained in the following notice, which has been issued by the Registrar of the University to all heads of schools and colleges in Bengal :—

“In answer to inquiries that have been addressed to them from various quarters, the Vice-Chancellor and Syndicate deem it right to explain, in general terms, the character of the Entrance Examination in English, for which no text-books have been prescribed.

“The examination will be on the English Language, not on English *literature*.

“Candidates are expected to be well acquainted with English, as written at the present day, in its simpler forms. They must not only understand the grammatical structure of the language, but be able to write it with considerable idiomatic accuracy.

“More attention ought to be paid to Prose than to Poetry.

“No Poetry older than that of Goldsmith need be studied.”

The change involved in these directions is open to three grave objections. In the first place, the very principle upon which it appears to be based is a mistake. The importance it attaches to English composition is almost of an exclusive kind, and by so doing it clearly subordinates thought or the formation of correct ideas to the acquisition of a good style of writing. Now, a good style of writing is certainly a very valuable accomplishment, but it is not too much to say that it is valuable chiefly as a medium for the expression of thought. Considering the supreme importance of cultivating the faculty of thought or of framing sound ideas and conceptions of things, the formation of a fine style of writing seems to be but a frivolous occupation of the mind; and I feel no hesitation in saying that the change under notice, although a change in the right direction, has been carried much too far. In the second place, this change will in all likelihood effect something like a revolu-

tion in the method in which literary instruction is now given in the schools of Bengal. The requirements of the Matriculation Examination being limited to a knowledge of the structure of the English language and the acquisition of an idiomatic style of writing, the whole scheme of instruction in our schools, from the highest classes to the lowest, will, I am certain, undergo such a modification as will ensure the fulfilment of those particular requirements, but of no other. I am justified by my knowledge of the disposition of our school authorities in saying that they are always impelled to subordinate their plan of instruction to the requirements of the University examinations, not merely in the classes which immediately supply candidates for those examinations, but in a good number of those that are beneath them. The result, therefore, of the change adopted by the University will be that by far the greater portion of the time spent by our boys at school will be devoted to the study and accumulation of a few grammatical technicalities to something like an utter neglect of thought and the formation of correct elementary ideas. But whatever value may be set upon any scheme of study which enables the student to acquire a good style of composition, I think it ought to be condemned without mercy if it interferes in any material degree with the exercise of the faculty of thought and the collection of a goodly stock of sound and useful ideas in boyhood. Lastly, the change ought to be examined from a practical point of view. Its object, as we have seen, is to require of the student a correct knowledge of the English language and the power of writing English with "considerable idiomatic accuracy." Now, it should be borne in mind that the English language is not the mother-tongue of the Bengali, and that, consequently, it is the idiom of that language which he cannot easily understand or master. I know that many of my countrymen can write English with a remarkable mastery over its idiom; but I cannot conceal from myself that the great majority of them have a very imperfect knowledge of that idiom. And it is particularly worthy of remark that many of those who can write idiomatic English do so as it were *unconsciously*. What happens in by far the largest number of cases is something like this. We make a constant study of good English authors and along with their thoughts and ideas we go on imbibing the manner of their writing, no matter whether we will or no. And thus, when our study has been sufficiently varied and extensive, we find ourselves able to write English with something like idiomatic accuracy. The power of writing idiomatically insinuates itself as it were into us; and it accordingly happens that

we are often unable to distinguish the idiomatic from the non-idiomatic. It is clear that this unconscious possession, so to say, of the idiom of any language cannot be of any great use for the purposes of instruction, for instruction is possible only with a conscious knowledge of what is correct and what is not correct. Now, leaving aside the schools which exist in Calcutta, where the tutorial staff is generally of a superior quality, it cannot be denied that, in the numerous schools in the Mofussil, the teachers are ordinarily men of small attainments, whether in the English language or literature. And I have accordingly very grave doubts whether the Mofussil schools at least will be able to work up to the requirements of the change under notice. They will undoubtedly struggle hard—make a good deal of effort—grudge no time; but the result, I fear, will be wholly incommensurate to the force of the struggle, the strength of the effort, or the amount of time that may be bestowed. I am humbly of opinion that the sort of change which has been prescribed for the Entrance Examination should have been adopted with reference only to the B. A. Degree Examination: for, as our College classes are supplied with European professors, who claim the English language as their vernacular, the scheme would in that case have met with conditions suitable to its execution, and would consequently have had a better chance of success. And as for the Entrance Examination, I think a good deal in the way of improvement could have been effected by altering simply the *spirit* of that examination—in other words, by framing questions more with a view to ascertain the student's knowledge of the elementary principles of grammar and composition than to test his capacity to get by heart Greek and Latin roots, to explain recondite "allusions," to master grammatical antiquities, and so on. The time which is now devoted to these fruitless occupations would be enough for acquiring a tolerable knowledge of the broad rules of grammar and the elementary principles of composition. And if more time than can be thus obtained were required, the want, I think, might be supplied by diminishing the size of the text-book.

The next point I shall consider is the study of History. History is not only a very valuable, but a very difficult branch of knowledge. Its importance consists chiefly in the materials it offers for establishing general principles by which to judge of the origin, destination, and relative order of social phenomena; and it should be perfectly clear that, for the sake of establishing such general principles, it is absolutely necessary to have a connected view of the history of the human race from the earliest

times of which there is any record down to the present. Apart, however, from this ultimate consideration, it should always be borne in mind that historic facts have two very important characteristics. In the first place, every historic fact is a necessary result of some fact or facts which preceded it, and consequently it is impossible to understand it clearly and in all its bearings without a careful study of those antecedent facts. In the second place, every historic fact, from the very circumstance of its being the result of one or more preceding facts, is more complex than the latter; and thus every connected series of facts is a series of gradually increasing complexity. And as the natural and most profitable method of study is to begin with the simplest and proceed by regular gradations to the most complex, it is clear that the study of historic facts can neither be practicable nor useful unless it is based upon that method. Now, it should be always remembered that what we have said regarding particular historic facts applies with peculiar force to the histories of the different countries of the ancient and modern world. These histories, although they do not in all cases spring from one another like individual historic facts, are distinguished at least by the circumstance of their having influenced each other in a very material degree. It needs no argument, for instance, to prove that the civilization of Egypt greatly influenced that of Greece, while the latter in its turn largely influenced the civilization of Rome; and it will, I think, be admitted by everybody that Modern Europe is the immediate consequence of the Roman Empire. Then, again, like individual historic facts, these histories increase in complexity according to their chronological order, the history of Modern Europe, for instance, being infinitely more complex than the history of any of the great empires of antiquity. The following passage from M. Guizot's *History of Civilization* makes this sufficiently clear. After pointing out the remarkable unity and simplicity of all ancient civilizations, the great philosophic historian goes on* :—

“It has been wholly otherwise with the civilization of Modern Europe. Without entering into details, look upon it, gather together your recollections: it will immediately appear to you varied, confused, stormy; all forms, all principles of social organization co-exist therein; powers spiritual and temporal; elements theocratic, monarchical, aristocratic, democratic; all orders, all social arrangements mingle and press upon one another; there are infinite degrees of liberty, wealth and

* See Guizot's *History of Civilization in Europe*, Lecture II, p. 24.

influence. These various forces are in a state of continual struggle among themselves, yet no one succeeds in stifling the others, and taking possession of society. In ancient times, at every epoch, all societies seemed cast in the same mould : it is sometimes pure monarchy, sometimes theocracy or democracy that prevails ; but each, in its turn, prevails completely. Modern Europe presents us with examples of all systems, of all experiments of social organization ; pure or mixed monarchies, theocracies, republics, more or less aristocratic, have thus thrived simultaneously, one beside the other ; and, notwithstanding their diversity, they have all a certain resemblance, a certain family likeness, which it is impossible to mistake."

If there is any truth in the preceding observations, it follows necessarily that the only logical and profitable method of studying history would be to begin with Egypt, and, after going through Greece and Rome and mediæval Europe in succession, to take up Modern Europe. Such a study is necessary not only for obtaining a connected view of the progress of the human race from a state of something like primitive rudeness to one of great material prosperity and enlightenment, but also for the sake of a correct understanding of particular historic phenomena. It is, moreover, the only method of study which tallies with the fundamental conditions of intellectual development which is incompatible with the study of the complex before the simple. If conducted upon any other method, the study of history is sure to be of an empirical nature, and, instead of becoming, as it is in reality, the most useful and interesting of all our studies, will fail to produce any other effect besides that which constitutes the bane of our present educational system, *viz.*, cramming. Now, let us see the order in which history is studied in the Calcutta University. Down to a very recent period that order was as follows :—

For the Entrance Examination.

The outlines of Ancient History from such books as Mr. Marshman's Brief Survey of History or the Landmarks of Ancient History.

For the First Examination in Arts.

The History of England, as contained in Student's Hume.

For the B. A. Degree Examination.

The History of India as contained in Elphinstone ; The Histories of Greece and Rome ; The History of the Jews.

For the Honor Examination.

The History of Europe in the 16th century; Guizot's History of Civilization (introductory lectures); Hallam's Constitutional History; Mill's Political Economy.

Now, the knowledge of Ancient History required at the Entrance Examination was so meagre that it might almost be considered as good as nothing for the purpose of making it the basis of a profitable study of the modern world. But, supposing that knowledge to have been of a respectable kind, of what use could it be in studying the history of England which was required at the First Examination in Arts? Again, if Modern Europe is the result of Greece and Rome, was it not an inversion of the logical order of study to place the History of England before the histories of those two countries? And, lastly, how could Europe of the 16th century be understood or studied with advantage without any knowledge of imperial and mediæval Europe?

In 1868, however, the programme given above was modified as follows :—

Entrance Examination.

Outlines of the Histories of England and India.

First Examination in Arts.

The great Empires of the East. Greece and Rome.

B. A. Examination.

The History of England.

The History of India during the Hindú, Mahomedan, and British periods.

But this new scheme is not less vicious than that which preceded it. The study of the History of England in the first instance is by no means a rational procedure. And although at the First Examination in Arts, the study will comprise Greece and Rome and the great Empires of the East, which sounds pompously enough, still, on a reference to the text-book which has been appointed for this purpose, *viz.*, Mr. Taylor's Manual of Ancient History, we are extremely doubtful whether the result achieved will be at all sufficient to enable the student to enter upon a profitable study of Modern History; for what the University is pleased to call Greece and Rome and the great Empires of the East has been disposed of by Mr. Taylor within the compass of 477 pages and does not extend beyond the 5th century after Christ. Further, the study of Ancient History is

necessary only on account of its forming a logical introduction to that of the modern world, and becomes apparently purposeless and infructuous when it is succeeded by the study of a unique and partially isolated history like that of England, which has been prescribed for the B. A. Degree Examination. Finally, Europe of the 16th century, which still continues to be the historical course for the Honor Examination, is as hopeless an affair as ever. A portion of the objections now made would have been partially obviated if the amendment proposed by Babú Rajendro Lall Mitter at the meeting of the Faculty of Arts held on the 15th July 1868, where the preceding course was adopted, had prevailed.* Babú Rajendro Lall's proposal was as follows :—

“ That for the Entrance Course, the outlines of Ancient History and of the History of India, and for the First Arts Examination, the Histories of Greece, Rome, and England, be recommended instead of the courses proposed by the Syndicate.”

So far as I am aware of, Ancient History includes those of Greece and Rome, and I cannot therefore understand quite clearly what can have been meant by prescribing the former for the Entrance Examination and the latter for the next succeeding Examination in Arts. If, however, “the Histories of Greece and Rome” meant such a detailed history as cannot be furnished by any general work on Ancient History, I think Babú Rajendro Lall's proposal must be considered to have been of a very rational kind and its rejection by the University a serious mistake. But, although I have thus given my preference to the course proposed by our distinguished countryman, I must say that I do not much approve of the study of such general works on Ancient History as are current under the names of Outlines of Ancient History, Brief Survey of History, Landmarks of Ancient History, and so on. Embracing as they do the histories of many different countries, they supply very imperfect accounts of the great nations of antiquity, and thereby prevent any fair view being formed of the early civilization of any one of them, or of the manner in which they influenced one another. For all these reasons I would humbly propose the following course of historical study :—

For the Entrance Examination.

The History of Egypt.

* See Minutes of the Calcutta University for 1868-69, p. 57.

For the First Examination in Arts.

The Histories of Greece and Rome.

For the B. A. Degree Examination.

The later Roman Empire and Mediæval Europe.

For the Honor Examination.

The History of Europe from the taking of Constantinople by the Turks to the French Revolution of '93.

And now, to quote from the paper which I have referred to at the outset of this essay, "it must be clear to everybody that the historical course set forth above is exactly suited to the capacities of an intellect which, in its pursuit of knowledge, cannot make itself free of those infirmities for which a gradual advance from the simple to the complex is a necessary condition of successful study. It will also be seen that the course, comprising as it does something like a complete picture of human society, through all its progress from a state of primitive rudeness to one of dazzling enlightenment, is alone fitted to be an instrument of that kind of intellectual discipline which constitutes the true object of education."

I cannot dismiss this topic without saying a few words about the selection of historical text-books by the Calcutta University. It is observable that the selection of text-books, in general, by our University is not always of the happiest kind, and it is rather a difficult affair to determine why this is so. But that the position I have advanced is not altogether unfounded, I shall prove by a reference to the historical text-books which have been selected for the Entrance Examination, *viz.*, Mr. Collier's History of the British Empire and the History of British India by Mr. Lethbridge and the Rev. G. U. Pope. Of Mr. Collier's book I will say nothing in this place, for to do so would be to slay the slain. Mr. Lethbridge's work, however, calls for some remarks. In the first place, it is a very fortunate speculation, inasmuch as it will soon displace Mr. Marshman's History of India at the Entrance Examination. In the second place, it is said to be an astonishing improvement upon all existing works of its kind. Witness the following extract from the preface:—

"This work has been written with the view of meeting the requirements of the examinations of the Indian Universities; and is more especially intended for the use of candidates for the Entrance Examinations. We have learnt by experience, and

have been assured by the most competent educational authorities, that the want of a suitable book for this purpose has been long felt.

“Whilst we have compressed our work into as small a compass as possible, and have carefully avoided any detailed or abstruse discussions which might be uninteresting or obscure to a youthful reader, we have been equally careful to avoid the unscientific puerility which is supposed by some to be most intelligible and pleasing to youth.”

But these are the very circumstances which render it the more necessary for us to look at this work somewhat narrowly. It opens with an account of the Hindú period. This account, it must be confessed, is remarkably concise; but that the plan upon which it has been compiled is not altogether free from objections will appear from the following extract:—

“Vyasa, in this system (the Uttara Mimansa), like Jaimini in the Purva Mimansa, derives all things from God. He teaches that the Universe emanates from Brahma, or *Paratman*, the Supreme Soul; that man’s soul is identical in origin with the Supreme Soul; and that emancipation, or freedom from transmigration, will be attained so soon as man knows his soul to be one with the Supreme Soul.”

Now, it is one thing simply to inform the student that the ancient Hindús indulged largely in metaphysical speculations, and a quite different thing to explain to him what those speculations were. And as any explanation of the kind contained in the preceding extract is likely to be useless, if not positively mischievous, by its very conciseness, I am humbly of opinion that such explanations should have been altogether omitted. Metaphysics, which is obscure by its very nature, becomes doubly so when it is delivered with the conciseness of epigrams or aphorisms.

Then, again, Messrs. Lethbridge and Pope, after describing the battle of Thaneswar fought between Prithvi Raja of Ajmir and Mohammed Ghori in 1193, go on as follows* :—

“An interesting parallel may be drawn between the battle of Thaneswar, and the battle of Hastings which established the Norman power in England. The respective characters of Mohammed Ghori and of Prithvi Raja in the one contest, and those of William the Conqueror and Harold the Saxon in the other, are by no means dissimilar. Domestic dissensions, the quarrels between Harold and his brother Tostig, had weakened

* See Lethbridge’s History of India, p. 62.

the Saxons; just as the fights between Ajmir and Kánaúj had weakened the Hindús. The Muhammadan troops were animated by a fiery religious enthusiasm, and their leader believed he was recovering the conquered possessions of his great precursor Mahmud of Ghazni; just as William the Norman carried with him the sacred banner of the Pope, and regarded the Saxon as the usurper who had broken his oath and supplanted the rightful heir of Edward the Confessor. And, lastly, the numerous hosts of the brave Rajpúts were unable to stand against the hardy and disciplined veterans of Mohammed; just as the chivalrous devotion of the Saxons availed nothing against the coolness and steadiness of William's practiced soldiers and the consummate military skill of their leader."

Assuming for argument's sake that the characters of Mohammed Ghorí and Prithví Raja on the one hand, and of William the Conqueror and Harold the Saxon on the other, are "by no means dissimilar," I hope it will not be said that any similarity in the characters of the persons concerned in any historical incidents establishes any similarity between those incidents themselves. And although "domestic dissensions between Harold and his brother Tostig" are spoken of as having weakened the Saxons in the same way as the disputes between Ajmir and Kánaúj weakened the Rajpúts, it should be observed, in the first instance, that the Bengali lad reading Mr. Collier's History of the British Empire hears nothing about any "domestic dissensions" between Harold and Tostig; and, secondly, that the fact of the Saxons and the Rajpúts having been alike weakened by "domestic dissensions" does not in any way render the *battles* of Hastings and Thaneswar of a parallel nature. In the third place, although the propagation of Islam was one of the objects of the early Mohammedan invasions of India, it would be a serious historical misrepresentation to say, merely because William the Norman "carried with him the sacred banner of the Pope," that the object of his invasion of England was really of so pious a nature as the extension of the spiritual empire of Christ's Vicegerent on earth. But that matter apart, what resemblance is there between "recovering the conquered possessions of a great precursor" and the "breaking of an oath?" And, fourthly, if the fact of one combatant yielding to another can afford basis for a parallel, I think a parallel to the battle of Thaneswar might be had not only in the battle of Hastings, but in each and every one of the battles that have been fought on this planet of ours since the creation of man. The fact is that there is no parallel whatever between Hastings and Thaneswar;

and thus the assertion of any parallel between them can have the only effect of impressing the infant mind with the false idea that the histories of England and India are of a similar nature, when, in fact, no more similarity exists between them than can be traced between the Sepoy Mutiny and the French Revolution of '93. And now, if the elaborate parallel drawn between the battles of Hastings and Thanoswar is not "an unscientific puerility," I do not know what is.

Lastly, it should be observed that Messrs. Pope and Lethbridge have so faithfully carried out the principle of *multum in parvo* that the work they have produced is more an oppressive collection of disjointed notes than an agreeable narrative of historical occurrences. And as the best way of repelling the infant mind from study is to give it a large assemblage of dry facts to work upon, I fear the book is unscientific in its very conception, and is admirably fitted to encourage cramming.

The third point upon which I wish to speak is the arrangement that has been made with regard to the Premchand Roychand fund. That fund consists of 2 lacs of rupees, and the interest derived from it is now spent in the following manner:—An examination is held every year upon no more than 5 out of 10 subjects, prescribed by the University for this purpose, and the candidate who attains the largest number of marks, becomes entitled to a bonus of Rs. 10,000, payable in 5 years, from the date when he passes the examination. The defect of this arrangement is this. It is found that those who compete for this prize generally take up no less than three subjects for the purpose of securing a good number of marks. Now, the subjects which have been prescribed for this examination are 1, English; 2, Latin; 3, Greek; 4, Sanscrit; 5, Arabic; 6, History of Greece, Rome, England and India, and a general view of the history of Modern Europe, including Political Economy; 7, Ethics, Mental Philosophy and Logic; 8, Pure Mathematics; 9, Mixed Mathematics; 10, Physical Science. None of these subjects can be studied thoroughly within the short space of one year, and it is difficult to imagine how any satisfactory result can be obtained when three or four of them have to be studied within the same period. By far the best arrangement would be, I think, to convert this bonus into a scholarship for the study of Mathematics and Physical Science for five successive years. A five years' study of one or two subjects must be productive of the most substantial results, and it is just such results which the University has yet failed to produce.

My last topic is the division of the successful candidates for

degrees or diplomas into *three* classes. Formerly, this division used to be made into two classes, but the number has been increased to three, for no good reason that I can imagine. So far as I can see, multiplication of classes detracts from the value of a diploma or a degree, and, what is of greater importance, has the virtual effect of lowering the standard of study. As a distinguished countryman of ours once told me, "if the B. A. or the M. A. degree is a prize, let it be treated as such."

And, now, if the Association whom I have the honor of addressing consider the several matters which I have placed before them to be of any importance, I should request them to make a representation to the University of Calcutta on the points I have discussed.

BOILER HOUSE WATERWORKS PUMPING STATION

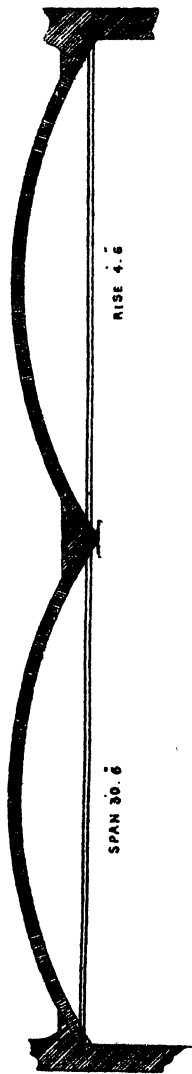


FIG. N° 5

Photomontage at the Bureau National des Minieres

ECONOMY AND TRADE.

1.—*On Tied Arches.* BY MR. W. CLARK.

[Read on the 26th March 1872.]

Soon after my arrival in India, and my appointment as Engineer to the Municipality of Calcutta, it was decided that drainage works should be undertaken for this city, and pending the adoption of the plan I had proposed for that purpose, my whole time was for some months given up to the arrangements necessary for the manufacture and provision of material; a suitable piece of land at Kotrung, nine miles from Calcutta, was obtained in 1857, and on it I was instructed to erect the necessary buildings and machinery for making bricks, soorky, &c., &c.

These buildings were commenced about the beginning of 1858, and were all completed with trifling exceptions in 1862.

They were originally intended to have pitched roofs with wooden trusses, purlins, rafters, and tiles, &c., indeed, the brick and soorky mill sheds are so built; but it occurred to me that they might be constructed in a more durable manner, and with less cost than the old plan I was then pursuing.

In all the arches of any considerable span I had ever seen, the thrust was sustained by the strength and weight of an abutment.

Buildings, however, had been covered, and floors constructed by the use of iron beams or girders, such as the Commercial Buildings in this city. Here the arches are constructed between the beams; and a very substantial floor or roof is obtained. But, for the purpose I had in view this was far too costly.

Fig. No. 1.

In this form of construction, arches of small span, comparatively 6 to 10 feet, are generally adopted, the two end girders are usually tied together by iron rods, and by the lateral rigidity of the girders, a continuous resistance to the thrust of the arch, or an 'abutment' is obtained.

To be thoroughly efficient,—to form a safe and durable construction according to my view, this *continuous* abutment is

indispensable; in other words, the arch must be sustained throughout its entire length at its springing line.

Support,—such as may be afforded by ties across the arch, and ‘washers’ at intervals outside the wall from which it springs,—is not sufficient, and only buildings of limited span can be safely so erected. It is a fact, however, that, since attention has been drawn to this form of construction, buildings have been so constructed.

Fig. No. 2.

At Raneegunge, for instance, I was much pleased to see, on the occasion of my first visit to that place, in October of last year, that very many buildings have arched roofs, which are sustained by tie-rods and washers, and apparently stand well. I think, however, no arch of large span, nor of small rise, could safely be so constructed, and therefore that it is of limited application.

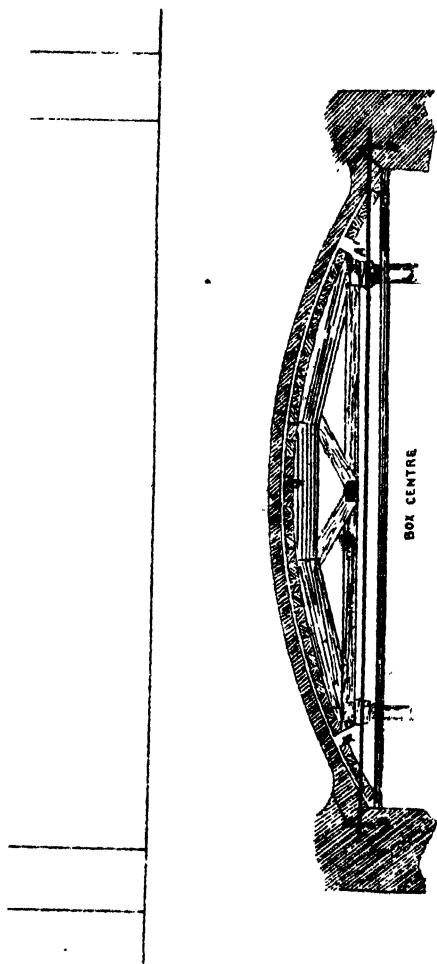
The method of sustaining the thrust of the arch, which I shall now proceed to describe, has many advantages, and its application is only limited by the strength of the materials employed in its construction.

One of the principal sheds first constructed at Kotrung has a row of piers and arches, front and back, and spanned with a trussed roof; the arches in the walls are 15 feet span, and 3 feet 6 inches rise; the centres or frames on which these were built were used in building the first and only real experiment that I have made in my investigation of this subject, and I think it worth explaining at length.

Two walls, about 2 feet high and 20 inches thick, were built 15 feet apart. On these a strip of boiler plate iron P. 6 inches wide are laid; the tie-rods are looped at the end, and passed over them in the manner shown at T. T.; the level of the plate and tie-rod is midway in height of the ‘skew back’ or inclined plane from which the arch springs, and the ‘bond’ of the brickwork is broken at this level by the insertion of a brick placed against the edge of the horizontal plate as shown; the arch 5 inches thick was then built on the centres above alluded to; and after being completed or ‘keyed in,’ they were lowered.

Fig. No. 6.

The arch was then loaded with loose bricks placed evenly on it to a height of 2 feet 6 inches; and after a short period the load was increased to 3 feet 6 inches; after remaining under this weight for several months, the load of loose brick was raised to 7 feet high, or about 7 cwt. per superficial foot over the arch; this load remained on the arch for about two years; the two tie-rods



BOX CENTRE

FIG. No 8

Electromagnetically at the Surveyor General's Office Calcutta.

which sustained it, and are $\frac{5}{8}$ ths of an inch in diameter, were tight as harp strings; the walls, having no foundation, sunk an inch or more into the ground under the weight, but not the slightest disturbance of material of the arch took place.

I saw clearly, then, that the principle, as applicable for roofs, was one of undoubted stability, and at Kotrung, where bricks were comparatively inexpensive, it was the cheapest permanent roof I could possibly construct. This was represented to the Municipal Commissioners of that day, and I was permitted to cover all the remaining buildings, from 1857 to the present, with arched roofs.

The first one of these was not the least remarkable, and it may be desirable to explain it. I had already built the walls, or rather rows of piers and arches, in which the piers were 1 foot 8 inches square, and the arches 8 feet 4 inches span, composed of two rings of bricks. The piers were weakened by having a four-inch country-made pipe built in their centres, the intention of these had been to carry off the roof water.

However, an arch was constructed upon them 18 feet 6 inches span as shown, and for the most part stood perfectly. One of the piers, however, had been accidentally built over an old potters' kiln, and it sunk completely

Figs. Nos. 4 & 7.

away from the horizontal iron plate, which then sustained not only the thrust of the arch, but the weight of the superincumbent brickwork; and in fact the plate sustained for a length of 20 feet, one-half the *weight* as well as the *thrust* of the arch. Under these circumstances the arch sank with its support to some extent, enough to show along the top a deviation from the straight line, but there never was any visible crack; and as the arch could not spread owing to the tie-rods, it remained, and has so continued for a period of 14 years, a perfectly sound and substantial building. This defective pier was subsequently cut out and rebuilt, and the outer-walls were strengthened as a matter of precaution, by lining the openings between the piers with an additional half brick ring.

This little incident was valuable experience. It proved to me that the arches applied as roofs, and with a continuous resistance along the line of the springing, were independent of any very costly foundation; that a foundation suited to any ordinary building would suffice for sustaining the weight of these arches; in fact, expensive foundations are, if possible, less necessary than

in ordinary buildings, for any settlement that may occur in the sustaining wall, must necessarily be regular and vertical; the walls cannot bulge *outwards*, for this is prevented by the tie-rods and plates; they cannot fall *inwards*, for they are sustained by the thrust of the arch.

Had the originally intended roof of light rafters and tiles been built on this wall, or had it been an arched roof sustained by ties and washers outside only, it would inevitably have tumbled down.

Prior to 1864, the following buildings had been roofed on this principle, *viz.* :—

The shops, sheds, bungalows, &c., at the steam works at Kotrung. The roofs varying from 10 to 40 feet wide.

Municipal shops at Entally, 30 feet wide.

Ditto at office, No. 1, Chowringhee, 30 feet wide.

Ditto, Gowkhana, Lower Circular Road, 20 feet wide.

Government godowns, west side of Circular Canal.

Calcutta and South Eastern Railway shops, 20 to 42 feet wide.

House and out-offices, No. 7, Loudon Street.

Ditto ditto, 3 Outram Street.

Bazar at Orphan Gunge, Kidderpoor, by Messrs. Mackintosh, Burn & Co.

Upper floor of Calcutta Boys' School by ditto—and some others.

The experience obtained in carrying out these buildings was most valuable; it enabled me *gradually* to extend the principle. Thus I began with an arch 15 feet span, 5 inches thick; subsequently a building 20 feet span with the same thickness of arch was constructed, and I consider that a perfectly safe limit for an arch of that thickness is a span of 25 feet.

By the time these buildings were completed, Kotrung brick manufactory had become an important place in the Municipal arrangements;—all the first water carts used in Calcutta were made there, and may still be seen about the streets of the city, those of a square shape painted white;—here all the conservancy carts for several years were built, certainly the best and cheapest I have ever known the department possess;—here were made at a large cost the iron 'Incenerators' for the more decent incineration of the Hindu dead, and it is a matter of regret that, having completed the entire arrangement and encountered all the necessary expense, the whole thing was abandoned for the want of only a little care and attention, which, had any one interested in its success been on the spot, it would not have wanted. However, this is another subject; but Kotrung had become a large workshop, and the works carried on there

required a large number of smith's forges, and an extension of the buildings for that purpose; it so happened that at this time the Superintendent's bungalow required the addition of a verandah, which was sanctioned. In the ordinary way this would have been 12 feet wide and 40 feet long, but I constructed it 40 feet wide and 12 feet long. This was in 1861. It succeeded perfectly, and I then obtained leave to build a smith's shop 40 feet wide, 60 feet long, covered with an arched roof 10 inches thick; the rise of the arch is 6 feet 8 inches; this also has stood perfectly since 1862, a period of 10 years, without repair.

With this building also an incident occurred which is instructive.

In 1863, when the present form of Municipal Government was introduced, and with it the first serious consideration of a proper water supply to the city, it was deemed desirable to make provision for the large work in contemplation, as there was at that time no idea of obtaining English contractors for its execution; a large amount of iron work was expected to be done, in castings, smith's work, &c., and the buildings for this purpose at Kotrung were somewhat extended; the smith's shop and foundry were lengthened, this was done during my absence for a few months from India. My Assistant who had charge of the work was not aware that a tank had been filled in, and he built one of the supporting walls for the arch of 40 feet span across this old tank; the result was that the wall sunk for a length of about 20 feet, and as much as 4 inches, when the weight of the arch came upon it, but apart from this settlement which was perceptible slightly along the line of the crown, no ill result followed,—there was no crack in the arch and not the slightest injury. Had the 'abutment' resistance, or horizontal plates, not been continuous, I am of opinion it would have failed.

I should mention that the supporting walls of this building are piers 20 inches thick, 4 feet 6 inches wide, with arched openings of 6 feet 3 inches span between them. It is, I think, from this circumstance quite apparent that though a good foundation is desirable in all cases, and to all constructions, still it is evident that no extra or unusual expense need be encountered for constructions covered with arches in this way.

About 1862, the Engineer of the Calcutta and South Eastern Railway Company built the shops for the machinery, and sheds for rolling stock, on this principle at Entally. There the principal building consists of two side spans 40 feet wide, 6 feet rise, and the centre shed 42 feet wide and 40 feet high. Rise of arch 6 feet 6 inches.

The carriage sheds are 125 feet long and 20 feet high, with a span of 21 feet, rise 5 feet; these are all 5-inch arches, that of the larger shed is 10 inches thick.

This place is well worth an inspection; few people are aware how fine a building exists in that locality.

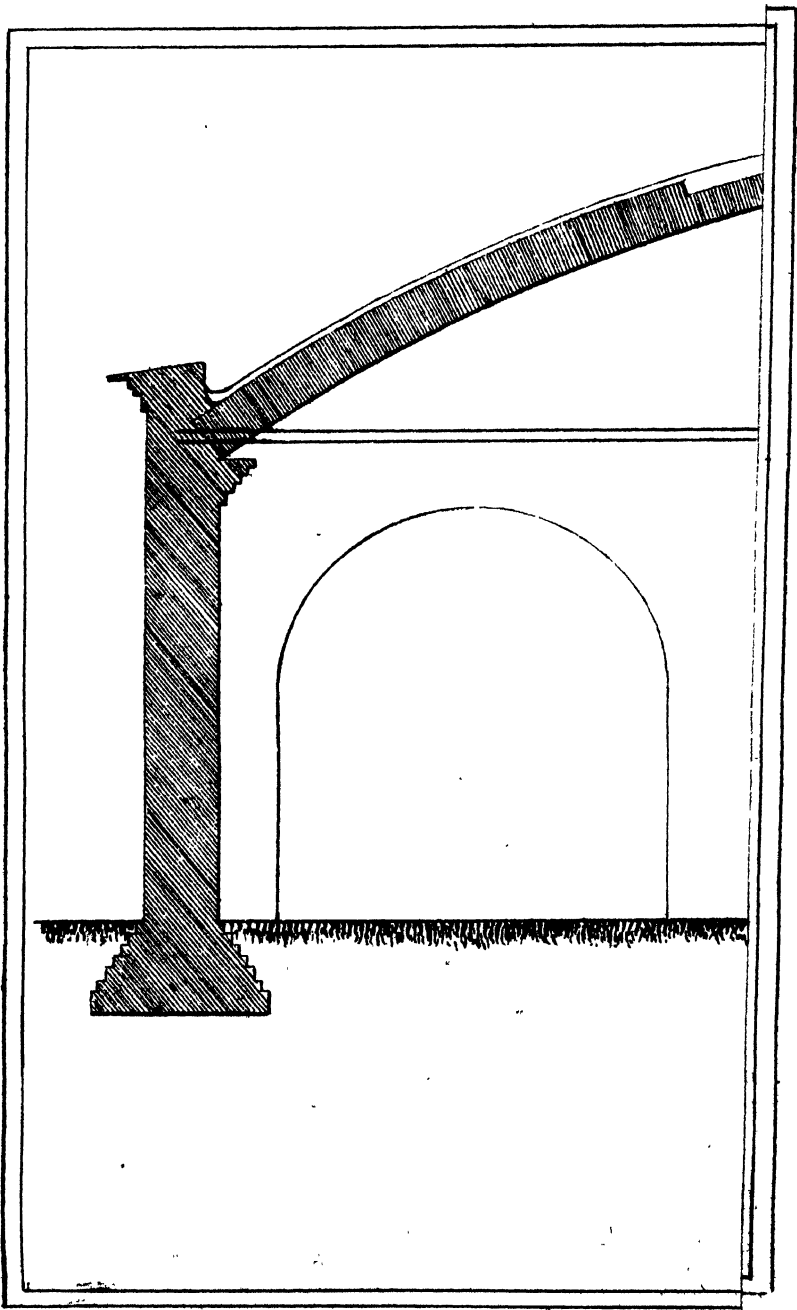
These buildings were left unfinished to some extent in 1862, and have for the past 10 years remained in precisely the same condition; not a single farthing has I believe been spent on them since, and they bear a very favorable contrast to a shed erected at the same time covered with a trussed and corrugated iron roof, the top of this was for the greater part blown away by the Cyclones of 1864 and 1867.

The buildings erected about the same time, 1862, have scarcely one of them had repair of any kind, and though they have been built for 9 or 10 years, are still in perfect order.

I have hitherto mentioned these tied arches only as *roofs*, I may now refer to them as *floors*. In the course of my public duties, I had ample opportunity to prove the success of the principle for roofs; but, as I never expected to have an opportunity to try it as a floor in the same way, I determined to do this at my own cost; as a preliminary, I built my experimental arch up to a level surface with celular brick-work, so as to make a floor, and placed the centres under it to prevent accident by its falling. I then put as many men on the top as could stand on half the arch; they were closely held in by bamboos, and were in fact a compact crowd; they were moved from side to side without producing the slightest deflection of any kind; they were then placed over the centre, and the time being given them, they were made to jump simultaneously without producing any effect, and it was only when this was repeated on one side of the centre that the slightest motion was perceptible; they, however, entirely failed to injure it in any way. This arch is still in existence.

The result was so satisfactory to my mind, that I commenced the erection of an upper-roomed house, No. 7 Loudon Street in this city. This was intended to be in some measure a pattern house, to prove that a handsome interior might be made even in India, which the wooden beams, burgars, and tiles, in the ordinary roofs and floors, can scarcely be called.

The floor of the upper rooms are arches of 20 feet span, 4 feet rise, and 10 inches thick; they are calculated to sustain a load of 1 cwt. on every square foot of floor; the spandrils or spaces between the arch near its springing and the level of the floor above, are filled with celular brick-work.



The under side of the arch which, forms the roof of the Drawing-room, is panelled and ornamented with mouldings in plaster of Paris. On the top of the house are tanks which receive the whole of the rain water which falls, and after they are full, it is discharged by an overflow pipe; as a first experiment every precaution was taken,—the house was most substantially built, and has stood thoroughly well; during the Cyclones of 1864 and 1867, no damage was done.

Throughout the entire building, timber is used only in the doors and windows. A second house was subsequently built in nearly the same way. Many persons have seen these houses, and I believe they are generally admitted to be successful specimens of Indian building.

During the last few years, the buildings erected by the Municipality at the four pumping stations, for the water works, and drainage, all have been roofed with these tied arches successfully. In the case of the water works pumping station, the arches are partly supported on

Fig. No. 5.

walls and partly on iron girders. Experience proves that the vibration and concussion of working machinery has not the slightest effect on them.

The new slaughter-houses also are covered in this way. These are comprised of arches 5 inches thick, 25 feet span and 5 feet rise. More recently it has been determined to erect the New Market-place with roofs of this description. These, like the Municipal work-shops at Entally which are 30 feet span, 7 feet 6 inches rise, will be built with bricks made especially, 7 inches wide.

The design for the New Market includes the use of iron columns on which wall arches are to be turned, from column to column, and from these the roof arches will spring; the span will be 28 feet 8 inches; rise 6 feet 3 inches.

Fig. No. 9.

The most recent construction of this kind I have been able to complete, is an Engine shed at the Municipal work-shops, Entally. The shed was required to be 25 feet wide and 60 feet long; I have, however, with the consent of the Chairman of the Municipality, built it 60 feet wide and 25 feet long, supported on walls 25 inches thick. In its way, this building has I think no equal; its width is only 4 feet less than that of Saint Paul's Cathedral in this city.

Fig. No. 20.

The arch at crown is 10 inches thick; 15 inches at springing, and the rise is 10 feet. It is composed of ordinary bricks, and mortar ground in a mill. Care has been taken in the building,

and the brick-work is good, but no unusual precaution was observed; it is strictly an ordinary well constructed building. It, however, proves that the principle of construction is applicable to large areas, such as churches, public halls, &c., and I invite inspection, not only of this, but the very fine building,—not far from it, though but little known,—the shops of the Calcutta and South-Eastern State Railway.

I propose here to describe some of the mechanical principles which apply to these constructions.

In the early days of Railways, and probably now, a common form of girder used for bridges was that known as a 'Sandwich' girder. Here a baulk or log of timber is split down its middle, a piece of thin plate iron is placed between the halves, and the whole is then bolted together. The use of the timber is to prevent the thin plate of iron from twisting or 'buckling,' so that its whole depth should be in a position to support the superincumbent weight when placed on its edge.

Fig. No. 10.

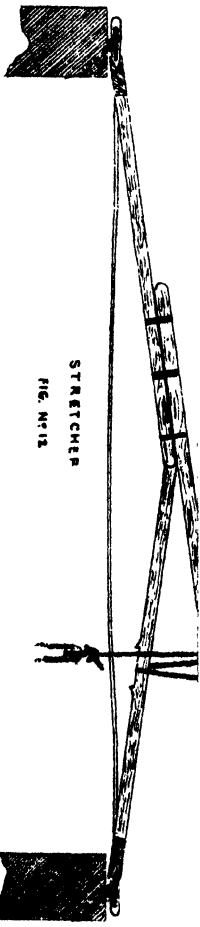
It occurred to me that if this plate iron were built within the thickness of the wall, at the level of the springing of an arch, it would act precisely as if it were bolted between the timber as above alluded to, and experience proves that this is so.

Fig. No. 3.

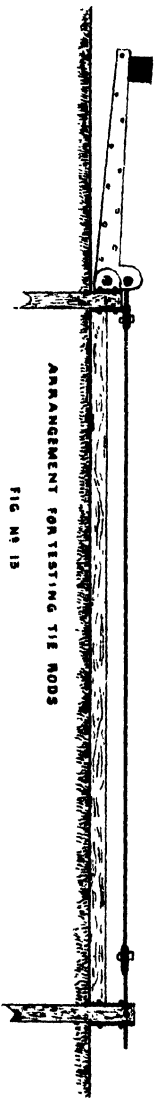
The problem of resisting the thrust then admits of a very simple mechanical solution. The direction of the thrust of the arch being taken as at right angles to the 'skew back' (or inclined plane from which the arch springs,) the amount of thrust may be determined by the principle of the resolution of forces; it may be considered as two forces, one acting vertically, and which evidently is equal to the weight of the half arch; the other component being the horizontal thrust; the amount of this may be very easily found by construction in the following way. Let H. G. C. F. represent the half arch, C. G. the 'skew back' or inclined plane. It will be sufficiently accurate to assume that the thrust of the arch is at right angles to the 'skew back.' Draw A. C. at right angles to C. G., produce it to B., set off on the vertical line C. D., the number of units (cwt. or tons), in the weight of one foot of the half arch; draw the horizontal D. E. touching C. B. in E., then the number of units in D. E. will represent the horizontal thrust of 1 foot in length of the half arch.

Fig. No. 11.

The distance apart of the tie-rods being then arranged with reference to the design of the structure (usually from 5 to 10 feet), the strain on the tie-rod will be the number of



STRETCHER
FIG. NO. 12



ARRANGEMENT FOR TESTING TIE RODS
FIG. NO. 13

units (cwts. or tons) in 1 foot of the half arch, multiplied by the distance apart of the tie-rods.

The strength of the horizontal plate will then be calculated as that of a quadrangular beam, with its load distributed over its length, *viz.*, the distance between the tie-rods; with ordinary iron, such as is here procurable, and with Indian smiths' work, my practice has been to put no more than 5 tons per square inch on the tie-rods as a permanent strain.

The formula for the strength of the horizontal plate and weight distributed is—

$$\frac{W}{2} = \frac{B \times D^2}{S} \times K$$

Where B=Breadth of beam in inches.

D=Depth of ,, ,,

S=Span in feet.

W=Breaking weight in cwt. at centre of beam.

K=27 a constant for wrought iron.

For large spans or where extra strength may be required for warehouse floors, &c., two or more plates and tie-rods may be used. Two half inch plates, and tie-rods, one over the other are used in the case of the 40 feet arch at Kotrung, and the 60 feet arch just completed at Entally; the calculation for this latter will be given at the end of this paper.

It may probably be asked, when there are a succession of arches all similar to each other, whether it is necessary to carry the iron ties through all of them, or whether the two end spans alone would be sufficient? I think so, but I must mention a circumstance which occurred at Kotrung to a building consisting of 3 spans of 20 feet each.

A slight shock of an earthquake which occurred a few years ago, broke two of the tie-rods in the centre span which had been made somewhat slighter than those in the side spans. The building was not injured in the least, but the tie-rods were replaced. The weight of iron is so little, that the security it gives is, I think, well worth its cost.

I may here remark that there is no difficulty in renewing the tie-rods should it ever be required.

The horizontal plates being built within the solid wall may be said to be indestructible.

Apertures for skylights and ventilation may be made in the arch almost any size required.

The Entally shops have skylights 5 feet square, but they might be much larger.

The plan is to build into the arch two pieces of boiler plate

iron to act as discharging arches for the width of the opening in the roof arch. See Fig. No. 14.

It is always necessary to test the tie-rods and straps, and this I have usually done to one-half more than the permanent strain they are intended to bear. A very simple apparatus is required for this purpose. Fig. No. 13.

In the construction of these arches there are several points which should be carefully observed.

First the tie-rods should be strained when in position, so as to put them into about the same tension as they will have to bear when the thrust of the arch come upon them. This will prevent further movement and subsidence of the arch, when the centres are struck. Fig. No. 12.

The centres should be what we call 'box-centres,' the portion A A' B being comprised of several 'ribs' with 'laggings' constructed on a frame AA'—its level should be 6 or 8 inches Fig. No. 8.

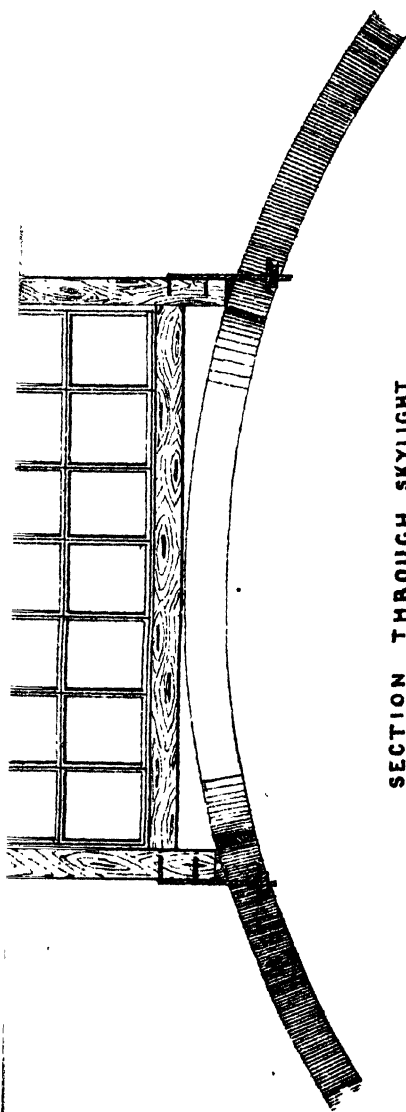
above the tie-rods, so as to admit of the 'centre' being lowered on to rollers and pushed forward without touching the tie-rods; that portion of the 'centre' from D to A should be separate and should be first removed, so as to allow the 'centre' to be lowered—in this way by using the 'centres' in successive lengths of 10 or 12 feet of arch constructed, very little expense is incurred.

In Calcutta the actual cost for roofs 5 inches thick, including centring, iron work, and all labor and materials for arches, and from 10 to 25 feet span, is about 6 to 7 annas per foot. This allows the brick-work to cost Rs. 40 per 100 cubic feet; at this price the actual cost of the brick-work is about one-half or four annas per foot, the other 3 annas for iron work, centres and fixing.

Arches from 25 feet to 40 feet span can be constructed from 12 annas to one rupee per foot, taking the Calcutta rates for good work.

It is a common practice to pay more for arching than for plain walls, but apart from the cost of the centre, there is no reason whatever for this; the arch is even more easily constructed by the workmen than a wall, and can be quicker done.

In the early days of railway construction here, a claim was preferred by a contracting firm for payment for the cubic contents of the entire opening of a bridge. It was the custom in India for the bricklayers to make 'culboords' or centres for themselves; this was done by the use of bricks, bamboos, and



SECTION THROUGH SKYLIGHT

FIG. 15

mud, so as to form the shape of the arch. Wooden centres were not used. This practice enabled the bricklayers to charge the labor for the entire contents of the construction, and a plea was probably so established for charging for the whole as imaginary brick-work. However, even custom was not, I believe, law strong enough to support so unreasonable a claim; but even now, when centres are supplied and fixed for them, the bricklayers cling to their old privilege of an extra rate, for which there is no reason. The cost of the centres is very trifling, when used, as I have explained, and if care be taken, the labor of shifting and setting up the centres, as portions of the arch are completed, may be reduced to a very small sum, and there is no real cause for any other extra.

I am quite certain that in Calcutta ordinary buildings may be covered at from 25 per cent. less than with the usual wooden beams, and when the span becomes large for less than one-half the cost of any other permanent plan that can be devised. I omit from this, corrugated iron, which is suitable only for particular buildings, and cannot be considered a permanent covering, but the difference of cost even of this material is very trifling.

With reference to the cost of repairs, I can now point to numerous buildings which have not been repaired for 10 years.

Such are the Conservancy Gowkhanah.

The Entally Shops.

Calcutta and South-Eastern Railway Shops.

Buildings at Kotrung, &c.

The house, No. 7, Loudon Street, was finished in 1863. Nine years ago, it has had one repair to the exterior and a part of interior only, at a cost of Rs. 1,300. A house on the ordinary construction would have had a second repair at a cost of Rs. 3,000 each time; but not Rs. 50 of the Rs. 1,300 has been spent on the roof arches, nor on those of the floor covering the lower rooms.

It must be remembered that there are no beams either to be renewed or painted. Now painting is one of the heaviest items in house repairs, in India, and painting three sides of the ordinary beams is equivalent to painting the entire area of the ceiling; this expense entirely disappears from the account, when arches are adopted, and is replaced by that of whitewash only.

I need, I think, say no more on this subject than to state the conclusion I have arrived at, that buildings so constructed cost, so far as roofs are concerned, about 25 per cent. less than ordinary beams, burghas, and tiles; and that repairs to roofs and floors so erected do not exceed one-eighth that of the usual form of

construction. Moreover, taking the entire building into account, the repairs do not exceed one-third that of buildings as ordinarily constructed.

I think also that most persons who are familiar with it, will admit that the arched form, so far as appearance and finish are concerned, is decidedly superior to the ordinary wooden beam and terrace roof.

I propose now to turn to another part of the subject. I have at some considerable length in this paper given my views, and I have done so with the hope that those who may have similar buildings to erect, will be assisted by my 15 years of experience, for I am sanguine that the principle has only to be known and understood by those who are interested in the permanent buildings of the country, to be greatly extended; and prove, as I hope, it will do, of great benefit to those who may adopt it.

For all kinds of sheds, and godowns, where bricks are procurable, or where stone can be readily cut into suitable masses, it is the roof for India, economy and permanence being considered.

It has also been proved successful for the floors of upper-roomed houses.

Now it is probable, I think, that this subject will be most interesting to those who own the most property in buildings, and undoubtedly the largest owner of property in this country is the Government.

In 1864-65, when the new barracks for European soldiers were under consideration, I endeavored to draw the attention of Government officers to these buildings, but I had to leave India in ill health, and no notice was taken of the subject. On my return in 1868, I found that I had ample occupation in minding my own business, and probably I should not have taken up the subject again, but that recently a building erected at Moorshedabad has failed; and it failed, so far as I can understand, from some misapprehension of the principles which I have endeavored to explain.

There will no doubt be a discussion on this paper, and I shall be exceedingly glad if some of my professional brethren will give this Association information as to the arched buildings in existence prior to 1857, for there were some. The Alipore Court, for instance, is an arched, or, what is commonly called, a 'bomb proof' building; and also what has been done since.

It is to be understood that I by no means claim to have first suggested the arch as a covering at roof for buildings, the men who centuries ago constructed our magnificent cathedrals in England and on the continent of Europe, could, were they

now alive, I believe, teach us. Where is the building of the present century to be compared with York Minster, with its groined arch roof! It is true this is an era of iron and glass, materials the use of which in those days was limited to very small proportions. The magnificent buildings, recently erected, do not admit of comparison with our cathedrals. But what I do claim to have introduced is, an arched form of roof, independent of the mass of materials which were formerly necessary for abutments. Buildings at once safe and economical, by which large areas can be covered; of general application, and especially suited to this country and climate.

I shall now proceed to consider one class of Government buildings to which this principle of construction appears to me to be peculiarly suitable, *viz.*, barracks for European soldiers.

Barrack construction and arrangement is a subject of great importance to us Englishmen in India; for the comfort and health of our troops is closely allied to the subject of taxation, and I want to show that this form of construction can, in very many localities, be arranged with especial reference to the comfort and health of the soldiers, and to combine these advantages with very considerable economy.

I must at the outset, however, beg the forbearance of the medical profession, and the military officers who have the subject under their control. I am neither a soldier, nor a doctor, and I shall probably be told that I know nothing of the requirements, nor the difficulties attending upon barrack accommodation for British soldiers in India. It is quite true I have no experience of military buildings. I have only a knowledge of the general principles under which men exist, and which my daily experience, during a good many years spent in India, have taught me in my own person.

I now offer my views and suggestions, through the medium of this Social Science Association, because it seems to me the way possibly to obtain some consideration, and to be useful. Among the advantages which may, and I consider should, be obtained in properly constructed military buildings, are proper ventilation and a sufficient supply of pure water. Undoubtedly, these desiderata may be obtained with the ordinary flat roof, and other forms of construction, but the arch appears to have some especial advantages. For instance, to discharge the rain water from an ordinary flat roof, numerous down-spouts, or points of discharge are necessary, whereas arched roof buildings, even 200 feet long or more, may readily have the rain water discharged from two points only.

With the ordinary roof, to obtain the requisite fall for the water, it must be raised in the middle. The beams not unfrequently bend under the load, a pool is formed, and the roof leaks.

With the arched roofs this rise is obtained without any extra load whatever, and the compression of the material, due to their form, causes them to be watertight in a remarkable degree, so much so that tanks may readily be constructed to hold large quantities of water over them, and at a very trifling expense.

Another advantage is, that with the supporting walls of a given height, a larger cubical space for air due to the rise of the arch is obtained at a very trifling expenditure.

Again, on a flat surface, the sun's rays are not deflected, as they are by a surface obliquely exposed to them, and less heat is absorbed, there may not be much in this, but still it is a departure from ordinary practice in the right direction.

The drawing shows a barrack which would accommodate 48 men on two floors. It is supposed to be raised on

Fig. No. 16.

arches 4 feet from the ground, both floors, it is presumed, may be used as dormitories, as they may safely be, if the surrounding land is drained by sub-soil drains.

The arrangement consists of a large room 24 feet wide, and 96 feet long on each floor, with a verandah 10 feet wide extending round the entire building. Exclusive of the verandah, this will provide 96 feet of floor area per man.

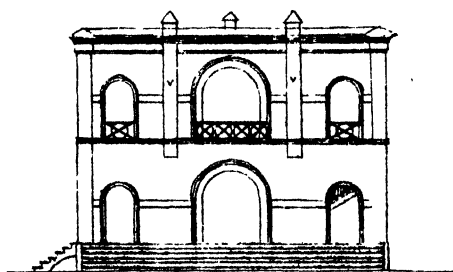
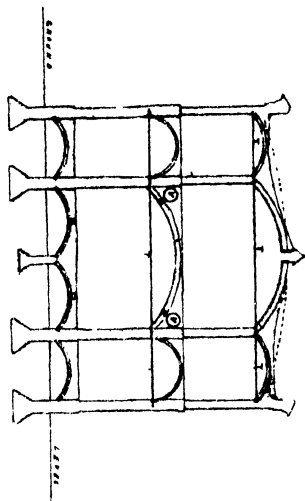
These buildings, in common with all others when the doors and windows are kept open, are abundantly ventilated; but when the doors and windows are closed, to keep out the glare and heat of the day in the hot season, or the cold air at night during the cold season, then special provision should be made for ventilating the rooms.

Over the (spandril) of the arch covering the lower rooms, is laid a pipe 18 inches diameter, or rather more than $1\frac{1}{2}$ superficial feet of sectional capacity; at each extremity of the barrack, these pipes terminate in a thin iron pipe 1 foot 3 inches square carried up above the level of the roof.

The heat of the sun on this iron tube will warm the air within it, and a very slight increase of temperature will cause an ascending current, drawn from the room; the air may be admitted to the room to supply its place at any level, usually near the floor.

Now, in breathing, an adult man inhales a quantity of air varying from 15 to 40 cubic inches, and during repose he makes from 15 to 20 respirations per minute. These numbers have been variously estimated; but for the purpose of ventilation, it is

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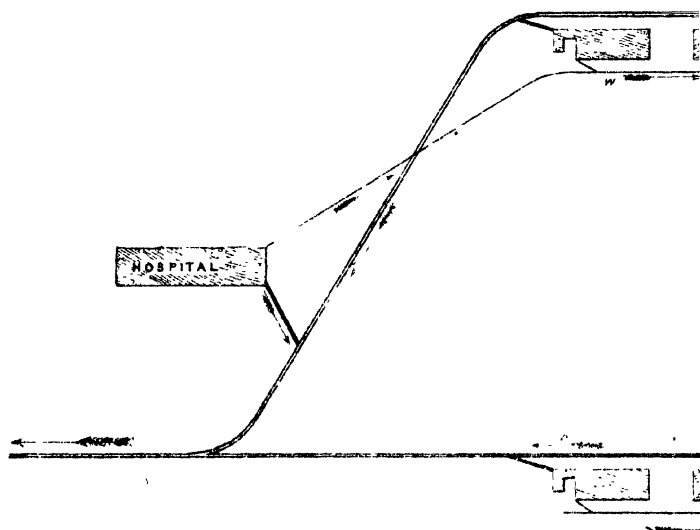
END ELEVATION

W. Clark

REFERENCE.

DRAINAGE PIPES

WATER



best to take the highest number, or 800 cubic inches per minute, or about half a cubic foot.

But allowance must also be made for the more abundant source of vitiation of the air, caused by exhalation from the skin, in this hot country.

The precise quantity of this exhalation is not accurately determined, so far as I know; but according to some experimenters, it is about 18 grains per minute; its bulk is not determined, but considered as vapour it will not be safe to estimate for less fresh air per minute than this vapour would saturate at ordinary temperatures. This is about 1 cubic foot of dry air per 6 grains; but, as the atmosphere here is seldom dry, an allowance must be made for this. Under all these circumstances it will not be safe to estimate for less than 5 cubic feet of air per minute per man. If 48 men be lodged in one room, then the air must be renewed at the rate of 240 cubic feet per minute, or 4 cubic feet per second. Now, if the iron tube I have mentioned be blackened, and exposed to the full influence of the sun's rays, a very considerable amount of heat will be absorbed. It will be warmed, and the air within it also. A very few degrees of additional temperature above that of the lower room, which is to be ventilated, will cause an ascending current of one foot per second, and efficient ventilation will thus be secured. Similarly, at night in the cold season, a difference of 4 or 5 degrees between the external and internal temperature will produce the same effect, and secure an efficient current; the points then to be attained are the free ingress and egress for the air so as not to produce cold draughts. The inlets and outlets should be out of reach of the men; a grating in the floor of the lower rooms, and apertures to the pipe in the arched ceiling for outlet will accomplish this. The omission of some of the planks in the venetian-doors would do it equally well for admitting the air. The upper-room would be provided with outlets in the shape of thin iron tubes blackened at top, about 4 feet long, and covered with a cowl, which would produce the required interchange of the external and internal air.

If more ventilation is wanted, by continuing the vertical or 'up cast' iron tube to the level of the ground floor, and placing in it a small fire, both rooms might be ventilated in precisely the same manner as by a chimney draught.

I have shown, on the plan a cantonment for 960 men, lodged in 20 such barracks; these are arranged in two lines containing 10 buildings in each, and a wide space between them; the officers' quarters are at one end, and the hospital at the other

Fig. No. 17.

In the centre area between the lines of barrack is a covered building nearly square in plan, and 250 lineal feet on each side; also a covered reservoir for water built above the level of the ground. I don't say that this is the best disposition of the buildings in a cantonment, nor do I mean to say that the plan contains all the buildings that are required: Mess-rooms, non-commissioned officers' quarters, &c., &c., &c. are necessary, which are not here shown. The plan is solely intended to illustrate the general principles of what I am endeavoring to describe, and any additions to the buildings would strengthen my argument. A military man would probably arrange it differently, and in a way equally suitable for the water supply and drainage of the place, and it is the former to which in this paper I now wish more particularly to allude.

Fig. No. 18.

Fig. No. 19.

The large covered space in the centre of the area is intended for drill, exercise, recreation, mechanic's shops, &c., &c. and such other occupation as should engage the time of a reasonable being when not actually engaged with his duties or taking needful rest; time, in fact, representing a large portion of a soldier's existence in this country.

The plan is intended to show that a large covered area can be constructed at a moderate cost, in which the soldiers may spend some of their unoccupied hours. This covered area comprises 62,500 superficial feet, or an additional area of 62.5 feet per man for 1,000 men, and besides affording a place for healthful recreation, this would, with the barracks, afford a large additional area for intercepting at a high level the rain water as it falls. This, with the arched form of roof, would be easily accomplished. The surface would be so formed as to lead the entire quantity, sometimes 3 inches per hour, to down-spouts at one end of the building. These down-spouts would be three inch cast iron pipes, with leaded joints to bear a little pressure, and a properly formed head for admission of the rain water, while excluding solid substances, dust, &c.

Two such down-spouts would be provided from each barrack, and all the other buildings of the cantonment, and if it be intended to store all the rain water, they would all terminate in covered reservoirs provided for that purpose. These pipes would be laid under ground, and the size would be calculated to convey the maximum quantity of rain which falls.

Now a pure water supply for cantonments is often a great difficulty; but it appears to me that in Lower Bengal, and probably in many other parts of India, where the rain-fall is ordinarily 60 or 70 inches per annum, this difficulty can be

ercome. The question is simply one of expense, and this is formidable, where the buildings are permanently constructed. An arrangement, as I have shown on the plan of cantonment, and with double-storied barracks, would afford a good supply of water, which must be intercepted by the roof surface, conveyed to a covered reservoir, and stored therein. In most places where the rain-fall is 70 inches, and superficial area of barrack accommodation per man is, say 70 feet, there would be no difficulty in providing a supply of 7 gallons of pure water for daily use from the barrack roof alone.

The ordinary plan for storing water, is to dig large ponds or tanks in the ground, and lead the rain water into them; they do receive any filthy matters which may be washed in from the surface, and all the other causes of pollution to which open tanks are liable.

Instead of digging a pond below the surface, I would construct a masonry tank above it, and obtain the supply direct from the rain clouds as they discharge their contents.

A sufficient supply for drinking and cooking purposes per man would be 3 gallons per day, or about half a cubic foot. This would be 183 cubic feet per annum. The problem is how to catch and store this quantity of rain water.

There would be no difficulty whatever in keeping the reservoirs supplied with a much larger quantity. I propose, for calculation, to assume that the annual depth of rain-fall is 48 inches only.

Now the total area available in the imaginary cantonment for catching the rain water would be as follows:—

Reservoir	...	...	...	22,500	super. feet.
Covered area	...	...	...	62,500	" "
20 Barracks	...	...	...
2 Hospitals	...	...	...
2 Officers' Quarters	...	...	...
Total, 24 buildings, each 5,604 super. feet=					1,35,360 " "

Total, area= 2,20,360 " "

On this surface an annual rain-fall of 4 feet in depth would amount to 8,81,440 cubic feet, and would be at the rate of 15 gallons per day per man per 1,000 men. Every drop of which could be stored if it were deemed desirable to do so, it is simply a matter of expense, and the expense of such a water supply would be at the rate of Rs. 225 per man for its first cost, or

calculated at 6 per cent. per annum, it would be a little more than 1 rupee per mensem per man for 15 gallons per day.

The covered reservoir shown on the plan is 150 feet square by 10 feet deep, with a surface area of 22,500 superficial feet, and an actual storage capacity at 10 feet deep, capable of containing 13,86,417 gallons, or at the rate of $3\frac{3}{4}$ gallons per day per man for 1,000 men.

The expense of this reservoir and pipes, for carrying and drawing off the water, would be in Calcutta, Rs. 60,000, or at the rate of Rs. 60 per man for 1,000 men.

The reservoir would be lined with cement, and the floor made tight with asphalt and brick-work.

The pipes would always remain full, to the level of the water in the reservoir, so that by inserting stop cocks into these pipes at any convenient places, the water could be drawn off.

I submit that this plan of catching and storing the rain water, is quite practicable.

The supply would be the purest possible, and the cost is not too great to prevent its adoption in suitable localities where there may now be a difficulty in obtaining a pure water supply. The arched roof is undoubtedly the most suitable, but any permanent buildings could be made available for the same purpose.

The drainage of such a cantonment should consist of surface drains to carry off the rain-water into some convenient tank, the water of which would be used for watering roads and any purposes for which such water would be suitable. The drainage from the latrines, &c., should be by stoneware pipes laid at a proper inclination, to some spot suitable for cultivation, where, if need be, it could be pumped up and used for irrigation.

I have shown, between the houses, a lavatory and a latrine for each barrack; the latter may be used with water on the principle now adopted in Calcutta. The management of these latrines could be intrusted to four or five sweepers for a whole regiment, and not subject to derangement and misuse by the men.

Over the latrines I have shown a covered tank capable of containing 8,500 gallons of water, or 176 gallons per man, sufficient for the lavatory and latrine, used by 48 men, for 20 days with proper usage.

If the total quantity of water I have shown as possible to be caught, be also stored, then this arrangement of water latrines could be carried out. A simple arrangement would be required for filling these small tanks from the general store.

The covered area for exercise, and recreation, appears to me to be an indispensable adjunct to an Indian cantonment, its

loftiness 22 feet, and large size, with the arrangement for ventilation through the roof would insure a cool building, cooler probably than the barracks, and therefore more likely to be occupied during the day, which would be a great desideratum.

An abstract of the quantities in this building is given at the end of the paper; and the estimate, taking Calcutta rates for a plain building without floor, amounts to one rupee per foot, and I think no other form of permanent construction could be put up for the same amount in this country. A similar building may be seen at the Calcutta and South-Eastern State Railway shops.

With reference to the water tanks, I will anticipate an objection, that they cannot be constructed of brick-work to contain 3 feet of water.

In reply to this, I would simply say, go to the Palmer's Bridge Pumping Station for the drainage of Calcutta, and there you will see exactly, what is here proposed, a tank constructed with brick-work and lined with asphalt, containing 3 feet in depth of water, as it has done for the past three years, a perfect success. I have made no suggestion in this paper which could not, I am confident, be carried out. Nor one which I would not undertake to carry out myself.

If I have in any way trespassed on the province of others, I trust I may be forgiven; as a Sanitary Engineer, these subjects have been constantly under my observation for years past, and I have been anxious that, if useful, they should be publicly known, as they will now be, through the medium of our Social Science Association.

W. CLARK.

*Strength of Ironwork in Roof of Engine Shed at Entally Yard,
60 feet Span.*

- (1.) Weight to be sustained is found thus:—

The span of arch is=60 feet, the rise=10 feet.

This gives a length of arch=64 feet.

The distance between tie-rods is 5' 3", and average thickness of brick-work in arch is 12½ inches, then the weight of half arch will be

$$\left(\frac{64}{2} \times 5\frac{1}{2}' \times 12\frac{1}{2}''\right) = 32' \times 5\cdot25' \times 1\cdot04' = 175$$

cubic feet; and taking a weight of one cubic foot=1 cwt., then 175 cwt.=weight of half arch.

By construction we find this is equal to a horizontal thrust of 230 cwts.=11½ tons.

- (2.) Strength of tie-rods:—

Taking 5 tons to the square inch as a safe load,

then a rod $\frac{11\cdot5}{5}$ square inches in section will be required. This is equal to 2·3 square inches.

But as we have 2 tie-rods, each must be $\frac{2\cdot3}{2}$ or

1·15 square inches in section, or of 1¼" diameter.

- (3.) Strength of horizontal plates:—

Taking W=breaking weight in cwt.=230 cwt.

„ S=distance between tie-rods in feet=5·25 feet.

„ D=convenient depth of horizontal plates in inches=9 inches.

„ B=breadth of horizontal plates in inches.

„ K=coefficient of rupture (a constant)=27 for W. iron.

Then $\frac{W}{2} = \frac{B \times D^2}{S} \times K$; and $B = \frac{\frac{W}{2} \times S}{D^2 \times K} = \frac{115 \times 5\cdot25}{81 \times 27} = 0\cdot27$ inches.

Three times 0·27 inches, or 0·81 inches will be a safe strength if we use one plate, and $\frac{0\cdot81}{2}$ or 0·405, or ⅝ inches if we have two plates.

Therefore we require double tie-rods, each 1¼ inch diameter and double horizontal plates, 9" × ⅝ each.

*Abstract of Quantities in Covered Arches for Work and Recreation
in Cantonments as per Plan No. 18.*

	Rs.	As.	P.
Earthwork in foundation 48,197 cubic feet, at Rs. 6 per 1,000 =	289	2	11
Brickwork in walls and wall arches, 99,447 cubic feet, at Rs. 30 per 100 cubic feet ...	29,834	1	2
Brickwork in roof arches, including cost of centring 135,042 cubic feet, at Rs. 44 per 100 cubic feet	15,661	12	9
Concrete on roof arches, 10,176 cubic feet, at Rs. 30 per 100 cubic feet	3,052	13	0
Cornice, 2,556 cubic feet, at Re. 1	2,556	0	0
Wrought ironwork, 39 tons, at Rs. 250 =	9,750	0	0
Total, Rs. ...	61,143	13	10

Area covered $250 \times 250 = 62,500$ superficial feet.

W. CLARK.

2.—*Village Communities in India and Russia.*

BY THE REV. J. LONG.

[Read on the 26th March 1872.]

THE subject of Village Communities has long been considered one of great and vital importance to India, and decentralisation is the order of the day, as respects administration and finance, in Russia and India; both countries have groaned under the evils arising from centralisation, and the concentration of all powers in their respective capitals; they have suffered from plethora in the head, and are now finding that real reform must begin from below, from the village, as an unit—details must be settled by local authorities. A late despatch of the Duke of Argyll also affirms this principle by enjoining that local taxation shall, as far as possible, be collected and expended by the people who pay it: this implies an organization like the village system.

To treat the village system as its merits require would fill a large folio volume. There are most valuable papers on this subject buried in the archives of the State, and it is to be hoped that the Government of India may ere long give us a volume containing a digest of what has been recorded of the village-system in its present state and past condition throughout different parts of India. On the eve of starting for Europe, and leaving India, probably, for ever, I cannot refuse contributing my mite to what I believe a most vital measure for this country,—the revival or extension of village municipalities. While some are advocates for violent organic changes both in England and India, it is pleasing to see the increasing tendency of the public mind is more in favor of social reform, and especially on the land question, the giving to the peasant the fruits of his labor by security of tenure and corporate action, without which other reforms, religious or social, will be of little avail.

It is surprising how few writers on India reform have touched on this question of village municipalities, which lies at the root of the whole Indian social structure. We have on the other hand plenty of reforms cast in the Saxon mint utterly unsuited to an oriental

race, and involving serious issues on the future, while we overlook what is adapted to the genius of the people. We want more local and less legal knowledge in our legislatures: we need not plans shattering and dislocating native society, we must regard the soil we sow in, building on a good foundation in the soil, allowing time for the tree to grow, not led away by the mystification and cockneyism of lawyers, bearing in mind that important remark of Montesquieu "no nation ever attained to greatness, but by institutions in conformity with its spirit." A little attention to this might have saved us from the imposition of the Income-tax. "The Bombay Statesman" well acquainted with native opinion remarks on this subject:—"The people in the villages of this presidency resent strongly, we are told, the imposition of the Income-tax, and upon a ground that is somewhat striking. They say with perfect artlessness and great force, 'Who ever before heard of taxing a thing that no one can see? Tax our heads if you like, and according to their size; but how can you tax our *incomes* which no one sees, and no one knows but ourselves?' The idea of making an honest return to the Collector, as a matter of duty and obligation, never enters their minds at all."

One of the saddest things about our administration of India is the recklessness with which English administrators have allowed the village system to go to decay. Even our predecessors, the Mahomedans, early saw the policy of not disturbing an institution so complete, they did not intermeddle with the minor details of civil administration, and they availed themselves of the local influence of those officers to reconcile their subjects to their rule; they never claimed the proprietary right of the land, even in the proud days of Arangzib; they claimed to be lords of the revenue, not lords of the soil—though they confiscated all the church lands, they meddled little with private property. When the English got a grant of land near Calcutta in 1718, they were required to compensate the under-tenants, but on their assuming the reins of power themselves like a bull in a China shop they kicked everything about, uprooting oriental institutions and giving the people gimcracks of Brummagen ware, creating that class of middlemen which are equally the curse of India as of Ireland.

All I aim at within my limited space is simply to introduce the subject of the village, and to give a peep into a store-house rich in treasures of great value to humanity and especially to that class who, different from town populations, have suffered much in silence; who have not had like those in cities the means of making their wants known; in India the ryot has been well called a *dumb animal*; caste and the want of sympathy in

the upper stratum of his own countrymen have left him to rot and moulder away in silence.

But the ryot's day is coming, a groundswell has gone through Europe, up-heaving the masses. In France, Germany, Switzerland, Belgium, Norway, Sweden, peasant proprietorship* is established by law, and with it the village commune, without which the isolated peasant is a rope of sand. See a valuable work on this—"The Social Condition and Education of the People," by J. Key, Longman and Co., in which the author gives a full detail of the benefits of peasant proprietorship on the Continent of Europe. Laing's works are also very valuable in this respect, they as well as Key's show how peasant proprietorship contributes to public morality, to improved houses and education, to habits of prudence and economy, as well as to better clothing. Mr. Laing maintains "that a peasant proprietor must have an educated mind, whether he can read or write, or not," that a spirit of independence and self-reliance must be fostered by a system which makes a man the architect of his own fortune.

There is a movement beginning even in England in favor of peasant proprietorship, and of the establishing village Municipalities, "wherever 500 or more people dwell together on an area of a square mile, they shall be required to organise themselves for self-government, the community shall vote by heads of families, and shall choose a Mayor." The first French Revolution emancipated the peasantry of France, then Prussia took up the cry, and under Baron Stein released from feudal chains her peasantry whose blood had been shed so copiously in repelling French invasion; then in 1861, the great and noble example was set by Russia in smashing those fetters of landlordism which had so long repressed the energies of an enterprising people; England at last has done tardy justice to the Irish peasantry and will soon have herself to consider her own peasantry.

On this question of Irish tenure a very valuable work has been published by the Hon'ble G. Campbell, now Lieutenant-Governor of Bengal: "*The Irish Land.*" He adds another to the many examples of the service rendered to European questions by men of ripe Indian experience, though it was *formerly* the custom to ridicule them under the sobriquet of old Indians. Mr. Campbell was the first to point out that the *original Irish*

* By peasant proprietorship is meant a system which gives to each cultivating proprietor an amount of land sufficient for the support of himself and his family. Peasant proprietorship is not identical with that subdivision of the land in France and Bengal which turns it into pauper warrens. In Bengal, we have owners of the one-sixteenth of a mango.

land tenure was similar to the Indian having the village corporation and joint-property system. We shall give a few extracts from a book which deserves an extensive circulation and careful study—what oceans of human blood might have been saved had the Irish land question been viewed three centuries ago in the calm dispassionate tone of Mr. Campbell.*

There can be no doubt that the village system formerly prevailed in Ireland. The whole system of settlement and valuation is based on it to the present day, the town-lands being exactly preserved, though the villages have generally dissolved into separate farms. Davies, in some passages, speaks as if there was then a still subsisting system of constant repartition of the lands among the villagers—and this is no doubt the system of which there are abundant traces in India and elsewhere—but I suspect that in Ireland as in India, it had gradually become rare, or fallen into disuse; for Davies, in other passages, very fully and particularly explains how the village lands descended by inheritance under what he likens to the custom of gavel kind, that is, the law of equal partition among the sons, common to Ireland, India and most Aryan countries, where the feudal system has not prevailed over it.

* * * * *

The Restoration and Revolution only still further unsettled Irish tenures. The native system, however, seems to have long maintained its ground. The Right Hon'ble Judge Longfield was good enough to point out to me a passage in Vallancey giving an account of, I 'think,' Westmeath in the year 1682, from which it is evident that the village system was then in full force. The system of village management—the division of the land into shares called plough lands—the distribution of the burdens according to shares, all is described exactly as if it were the description of a village in Northern India. The villagers seem to a certain extent to have managed their own affairs, and to have paid in the lump; but they are already, it appears, more quarrelsome and unsettled than Indian villagers usually are. The functions of the landlord are said to have been principally to receive his dues, and to settle the quarrels constantly occurring between the villagers.

* * * * *

The external pressure which keeps the village system together being removed, that system gradually went to pieces and fell into desuetude. Great absentee Lords, being unable to deal directly with large numbers of small tenants, generally let large tracts to middlemen as is also the case in Bengal and Oudh. The middlemen, in pursuance of the native idea of improvement, covered the lands with small cultivators who squatted, upon the understanding, that they were to pay the customary rents, without special contract. The potato gave great facility for small holdings, and the lands of the Irish ryots went from

* The new law in Ireland giving tenant right is working well. Take the following as a specimen. The *Dublin Post* describes the recent sale of the Marquis of Waterford's estates as the most remarkable ever witnessed in the landed estates or any other court. The property was set up in 121 lots, and the total proceeds amounted to upwards of 800,000*l*. By far the largest portion of the property was purchased by tenants, some of whom offered at the rate of fifty years' purchase, others at forty years, and none of the bidders of this class offered less than thirty years' purchase, so eager were the tenantry to become proprietors.

father to sons, being equally divided among the sons, and a dower being provided for the daughters, according to the laws regulating the descent of Irish and Indian property.

* * * * *

The whole case in Ireland is, in this respect, analogous to what has occurred in Russia. In Russia the people were in an agrarian sense serfs, they were "adscripti glebæ." They were emancipated. The landlords said "we let you hold land because we wanted your labour, now that you are freed from any obligation to labour for us, we claim the right to do what we like with the land." The people said, "no we will not have emancipation on those terms, we have always held the land, and we are entitled to keep it, paying you a fair rent in lieu of the old compulsory labour," and the ex-serfs have gained their point.

Respecting the village system in the North-West Provinces of India, there is an able article in the *Calcutta Review* for 1850. "Village schools and peasant proprietors in the North-West Provinces" which describes the village *bhayáchargea* or brotherhood—a great contrast to Ireland. "Bound together by the ties of blood, connexion, and above all common interest, like the bundle of sticks they are difficult to break. Draughts may wither their crops; famine and disease may depopulate their houses: their fields may be deserted for a time, but when the storm blows over, they are certain to return. If an accident happen to any individual, he is assisted and befriended by his "bhybunds"(relatives). But above all, the grand advantage of this tenure over the zemindary is, that the entire profits are their own, and not strangers'. In the hands of the biswadar, the rent becomes capital, which directly or indirectly goes to improve his property, or is available on future occasions, while that of the zemindari is too often a mere revenue saving to support a position in the adjoining town, and to keep up idle servants, elephants, horses, and *surwarri* (equipage). In a flourishing pergunnah on this side the river (Jumna), we have no large zemindar with his lac, or two lacs of annual income; but on the other hand, we have thousands of small proprietors, each with his brood mare, his buffaloes, his oxen; in short, with every thing that makes a comfortable position in life."

We fear this picture is not quite applicable to the present state of things; feudal notions in officials—the corroding influence of the usurer and the increase of rack renting landlords are tending to break this bond of brotherhood.

Had England with her feudal notions on land only understood the village system of joint-property, the New Zealand war, with all its atrocities, might have been avoided, for the New Zealanders held their land on the *tribal* and *communal* principle, and denied

the right of any *individual* to sell what belonged to a corporate body.*

In Bengal the Sonthal rebellion was mainly provoked by thus meddling of individuals from Bengal with land that belonged to the tribe, and there is at the present time among them an uneasy feeling in connection with the land question owing to this infringement of tribal rights, which may lead to another outbreak, if justice be not speedily done. In 1832, the Kols of Chota Nagpur were driven into insurrection mainly owing to the attempt to dispossess them of their tribal lands.

On this question of land rights the Indian Government must move warily, for there is a strong tendency on the part of officers in the Forest Department, and of Collectors and English Griffs, to disregard the rights of the people to village lands. What incalculable mischief has been inflicted in Bengal by the ignoring last century of the rights of the village communities, ruining equally the patriarchal zemindar and the hereditary ryot! This 'meddling and muddling' with the land may one day lead to serious complications, if not checked in time; for no people on the face of the earth cling more tenaciously to their rights in the soil than do the Indian peasantry, and the monstrous doctrine, not

* The Hon'ble Mr. Fox, Member of the New Zealand House of Representatives, wrote in 1860 a pamphlet called "The War in New Zealand," in which he brings the subject out very clearly. The native tribe (Iwi) is sub-divided into "hapus." There is a head chief of the tribe; inferior chiefs, the heads of "hapus"; and individual "tataua," or freemen. Every tribe owns large tracts of land. These are the common property of the tribe. Particular hapus, as individual freemen, appropriate by occupation, cultivation, and otherwise, small portions of the common estate. Such occupation vests in them the ownership of the portion appropriated, and gives a right of separate ownership, *as against* all other individuals. But it does not give the right of *absolute alienation*. To other members of the tribe, the hapus as an individual may alienate. But they cannot alienate from the tribe without the consent of the tribe. The power of giving this consent is usually vested in the chief, who is a trustee of the rights of the tribe. This limitation is founded on reason; the political status of the tribe, as a whole, depending on its maintaining the integrity of its territory, and on the exclusion of foreigners who might be members of a hostile tribe. "The cultivation of a portion of forest land renders it the property of those who cultivate it, and this right descended from generation to generation. But this individual claim did not give the individual the right to dispose of it to Europeans." Thomson's *Story of New Zealand*, vol. i, p. 97. "Many persons buying land in New Zealand have fancied that when they attained the consent of one or two individuals, their title was complete; whereas the great art of making a secure purchase is to be careful that you have every possible claimant before you, and unless they are satisfied, the purchase cannot be considered complete." Mr. Bushy, the British Resident in New Zealand, before a Committee of the House of Commons, 1840:—"The sale of territory, to be valid, must be effected by the chief of the tribe, and all the chiefs of the various hapus acting together. Such a sale, whatever be the price given, would never be disputed." Archdeacon Hadfield, a Missionary of 23 years' standing, in a letter to Sir George Grey in 1845, states that through this ignorance of *joint property* in land, the Governor was led to sanction the purchase of land by a European from one native when there were more than 20 co-sharers. This led to a war which desolated the country, upset the work of civilization and missions, and tasked to the utmost the energies of 8,000 English soldiers, all because of sheer ignorance of village rights."

even derived from the Moslems, that the State is proprietor of the soil, is one that has never been recognised in any way by the Muhammadan rulers.* Happily, we have not wanted in India, many examples, on the other side in such men as Munro in Madras, Thomason and Bird in North India, who worked at the question of security of tenure, and as its guarantee, the restoration of the village system.

But the vital step now to be taken is the establishment, or, rather revival, of village municipalities all over India, in order to give the people a bulwark against local oppression and official bureaucracy, to afford the Government easy and special means of knowing the feelings and opinions of the masses,† and to serve as a check on the collection and distribution of taxes. It is valuable especially in relation to land, for though the peasants may seem ignorant and degraded, there is nothing they cling to stronger than the land; they will stand almost any amount of oppression rather than be ousted, and this extends throughout the East from the plains of India to the steppes of Russia. The Russian peasant's cry has always been, *Zemli i Volie*, the land and liberty; they used to say to their landlords in the worst days of serfdom—we are yours, but the land is ours. Similarly in India, Colonel Tod in his interesting Annals of Rajasthan tells us:—"The ryot (landholder) is the proprietor of the soil in Mewar. He claims it as his *bagota* (patrimony), and compares himself to the *d'huba* grass, which once taking root in the soil, can scarcely be effectually eradicated. He has ever in his mouth the common, though expressive adage, "*Bhogra dhanny raj ho, humra dhanny maj ho*, the tax

* See the valuable evidence brought forward on this subject by Colonel Briggs in his Land Tax in India.

† Even the Russian Government now refer questions of State for the opinion of the *Zemstvos*, or Provincial Assemblies, composed of peasants, bourgeois and nobles; the great military reform proposed for Russia has been discussed by them, as also the question of abolishing the capitation tax. It is singular these *Zemstvos* have voted in favor of an income tax as preferable to a capitation tax.

The English Government in India, by carrying the people with them through village municipalities could do many things otherwise impracticable. We know how sacred the monkey is regarded, and Europeans in former days have run a risk of their lives in attacking them; there is an anecdote of the way a village municipality can deal with the subject.

"At a special meeting of the Municipal Commissioners of Wallajapett, in the North Arcot District, a *Mahasarnamah*, or a representation by the inhabitants, *en masse*, of that station was considered, the complaint being "that the number of monkeys has of late considerably increased; that they are very mischievous, having bitten more than six persons in one month; and asking that measures should, in consequence, be taken to get rid of them." The worthies of the Municipality, after deliberating upon the matter, "resolved" that "a Maistry be at once appointed for trapping monkeys and deporting them to the jungles, and that a sum of rupees two hundred be left with one of the Commissioners for paying coolies, &c., who may be employed for the purpose." Europeans could not have meddled with this question without giving great offence.

belongs to the king, the land belongs to me." Sir J. Malcolm, in his "Malwa," gives an interesting anecdote illustrating this:—"In Malwa many villages have been depopulated for thirty years. The inhabitants fled several miles off, and dispersed in different towns. They, however, maintained friendly intercourse with each other, continued to intermarry, and on the restoration of order (in 1818) they all flocked to their own country. Under all the miseries and oppressions they suffered, they never gave up the hope of returning to their paternal lands. At the restoration, infant patels (hereditary village chiefs) even were reinstated: each site of a house, and every field, was instantly recognised and re-occupied by the real owner, without dispute. More than a hundred villages were re-peopled in a few weeks." Again, he observes, "I was desirous of giving the ruined village of Bassin to some Bhils. The ministers declared the proprietors must get possession if they returned. All attempts to discover them failed, and *Bhil Tija* was established with his clan. Three years afterwards, a boy put forth his claim as patel, or chief of the village, and his right was voluntarily restored by the Bhil." The Hindu chiefs, in speaking of these hereditary officers, declared to Sir John Malcolm, that they would become Mahomedans twenty times over, rather than give up their lands.

We shall now glance at this village system of India, and then compare it with that of Russia especially, referring to similar ones in other countries. Comparisons often bring great truths to light. What wonderful progress has been made by *Comparative Philology* from the days of Leibnitz and Bopp, its founders, down to Max Muller and Eichhoff, its popularisers. What light it has spread on the origin and extension of nations, it is a clue where history fails. Similarly, what a powerful instrument *Comparative Anatomy* has been, in the hands of a Cuvier, or a Lawrence, enabling them by examining one bone to know the whole structure of the animal. We have *Comparative Mythology* connecting India in its religion with Greece, Rome, and Germany. We have *Comparative Proverbology* tracing out the affinities and origin of proverbs, and with them many curious points in the sociology of widely-scattered nationalities; attention is now being directed to the *Comparative Sociology* of various countries, for manners and customs like language leave traces which remain for centuries deeply stamped on social institutions.*

* Professor Max Muller, in a lecture at the Royal Institution, has in a similar spirit entered on a comparison between the fables of various countries and ages, throwing light on their origin and affinities.

Examining the Indian village system then in comparison with that of other countries, it has been the habit of English writers to derive the municipal institutions of Europe from Roman origin, but recent researches are showing that we must go down much earlier, even anterior to the Greek and Roman era, and trace them to the plateau of Central Asia, where there was a common village system, as well as a common language among the ancient Celts, Slaves, Teutons, and Indians who lived there together. Even to the present day the village system survives on the banks of the Oxus, and the Russians, in their new acquisitions in Bokhara, are extending it; the village system, then like the Indo-Germanic languages, has come down to us as a relic from before the days of Menu, 3,000 years ago. Sir H. Maine, in his *Village Communities of East and West* has shown their affinities, as has the Hon'ble G. Campbell, in his "*The Irish Land*," he has traced out the village system in the far isles of the west.

I intend to take up this comparison specially with respect to two countries whose respective Aryan races had once a common ancestry, but have since been widely divergent, *viz.*, India and Russia; their classical languages, the *Sanskrit* and *Slavonic* have both a very strong affinity in their roots,* and there are many customs similar,† but it is especially in the village system, the village republic, the microcosm, or little world of the peasant, that the closest connection is seen. I spent five months in Russia in 1863, and was very much struck with the resemblance between the village system of both empires, and as I intend to spend this summer in Russia, I hope to glean further information on this deeply interesting subject. Of course, in India much of the village system has been effaced owing to the feudal influence of Mahomedanism, and the feudal views of many English rulers. Similarly in Russia, the autocracy of the Czar and the bureaucracy of the nobles over-shadowed it. But in both empires the Governing Authorities are now working at its revival; in Russia the great and glorious pyramid of social and political reform originated by the present Czar, who has been justly entitled *Alexander the Liberator*, is based on the village system as the unit, and the peasant in it is recognized fully as "one of our own flesh and blood;" he can rise to be the mayor of the village, and to take his seat in the provincial assembly, vested with equal authority and power of voting as the noble his former oppressivè master. The whole Russian press is unanimous on the importance of the

* See Appendix A.

† See Appendix B.

commune as the basis of all reform. Even the Emperor Nicholas was so convinced of its great and immense value for Russia, that he thought it ought to form the foundation of any new judicial organisation in Russia. In India, too, municipalities are the order of the day; from Cape Komorin to the Himalayas, it is felt by the Authorities that local taxation can only be carried out safely in connection with the revival of the village *panchayat*, or council, and the village *mandal*, or mayor. Even in Bengal, an important movement has been made in this direction by the *chaukidary bill*, and the *municipal bill* lately introduced; these in their working may ultimately assist in giving a serious check to the oppression of the police and of middlemen, and they may form a basis for some system of national representation.

This village system has spread not only to countries so widely divergent as Russia and India, but also to England, Ireland, and Germany.* Until lately, few dreamt that, even in feudalised England, the village system of collective property formerly prevailed, and that the village system was "the proprietary and even political unit of the earliest English society," but it is so, and we are indebted for this, as for many other discoveries, to the research of Germany. Professor Nasse of Bonn has discussed this subject at great length.† Professor Nasse's researches have shown that the English terms commons, open fields, cut-meadows,‡ indicate that, up to a late period, there were in many districts common arable fields which were distributed to different owners in rotation at Lammas Day in a sort of legalized tumultuary assembly. Common fields were, as Sir H. Maine points out, until lately, numerous near London, Cambridge, Oxford; in Huntingdonshire, out of a total area of 240,000 acres, 130,000 were commonable meadows, commons, and common fields. But "the barbarousness of the agriculture perpetuated in the common arable fields, the quarrels and heart-burning in the shifting severalties," along with the numerous Parliamentary Acts for enclosures have swept these away.

We give a few extracts from Sir H. Maine's work to illustrate the remains of the village system in England which has now become so feudal.

* Sir H. Maine, in his interesting work "*The Village Communities of the East and West*," has done much to bring this subject to light; his book is calculated to popularise a subject rather alien to the English mind.

† Über die Mittelalterliche Feldgemeinschaft in England.—Bonn.

‡ In Scotland they were called *commonities*. The same existed in Scandinavia, in the Orkney and Shetland Islands.

Economy and Trade.

Mr. Marshall wrote much on agriculture last century, but had no idea of the collective form of property which prevails in Russia and India. He simply writes about England. "A very few centuries ago, nearly the whole of the lands of England lay in an open and, more or less, in a commonable state. Each parish or township (at least in the more central and northern districts) comprised different descriptions of lands; having been subjected, during successive ages, to specified modes of occupancy, under ancient and strict regulations, which time had converted to law. These parochial arrangements, however, varied somewhat in different districts, but in the more central and greater part of the kingdom not widely; and the following statement may serve to convey a general idea of the whole of what may be termed *common-field townships* throughout England. Under this ingenious mode of organization each parish or township was considered as one common farm, though the tenantry were numerous." While the bleakest, worst-soiled, and most distant lands of the township were left in this native wild state, for timber and fuel, and for a common pasture, or suit of pastures, for the more ordinary stock of the township, whether horses, rearing cattle, sheep, or swine, without any other stint or restriction than what the arable and meadow lands indirectly gave; every joint-tenant, or occupier of the township enjoying the nominal privilege of keeping as much livestock on these common pastures in summer as the appropriated lands he occupied would maintain in winter. The appropriated lands of each township were laid out with equal goodness and propriety. That each occupier might have his proportionate share of lands of different qualities, and lying in different situations, the arable lands more particularly were divided into numerous parcels of sizes, doubtless, according to the size of the given township, and the number and rank of the occupiers. And, that the whole might be subjected to the same plan of management, and be conducted as one common farm, the arable lands were, moreover, divided into compartments as fields of nearly equal size, and generally *three or four** to receive, in constant rotation, the triennial succession of fallow, wheat (or rye), and spring crops (as barley, oats, beans, and peas), thus adapting and promoting a system of husbandry which, howsoever improper it is to become in these more enlightened days, was well adapted to the state of ignorance and vassalage of feudal times when each parish or township had its sole proprietor, the occupiers being at once his tenants and his soldiers, or nearer vassals. The lands were in course liable to be more or less deserted by their occupiers and left to the feebleness of the young, the aged, and the weaker sex. But the whole township being in this manner thrown into one system, the care and management of the livestock, at least, would be easier and better than they would have been under any other arrangement. And at all times the manager of the estate was better enabled to detect bad husbandry and enforce that which was profitable to the tenants and the State, by having the whole spread under the eye at once than he would have been had the lands been distributed in detached inclosed farmlets; besides, avoiding the expense of the inclosure. And another advantage arose from this more social arrangement, in barbarous times, the tenants, by being concentrated in villages, were not only best situated to defend each other from predatory attacks, but were called out by their lord with greater readiness in cases of emergency. (Marshall, p.p. 111—113).

Sir H. Maine finds traces in certain burghs in *Scotland* also; he states some of them. "The arable mark, cultivated under

* This division prevails in Russia.

rules prescribed by the town council, shifts periodically from one part of the domain to another, and the assignment of parcels within the cultivated area is by lot. It is interesting, too, to observe that the right to land for purposes of tillage is inseparably connected with the ownership of certain plots of land within the township. A similar connection between shares in the common field and certain ancient tenements in a village is sometimes found in England, and has been formally established at law (see the bitter complaints of Marshall, 'Rural Economy of Yorkshire,' i., 55). On the other hand, a group of persons more loosely defined has the right to pasture on the part of the common in grass, and this peculiarity occurs also in England. I am informed that most of the Scottish burghs have recently sold their "common-ties;" but it is to be hoped that all traces of the ancient customs of enjoyment have not been quite obliterated."

Sir H. Maine gives the following as the conclusion of his researches regarding the village system in England: "Upon the evidence collected by Nasse, supplied by the works of Marshall, and furnished by the witnesses examined before the Select Committee of 1844, and upon such as I have myself been able to gather, the villages of a Teutonic village community, which remained before the inclosures of the last century and the present, may be thus compendiously described: The arable part of the domain was indicated—(1) by simple intermixed fields, *i. e.*, fields of nearly equal size mingled together and belonging to an extraordinary number of owners, so that, according to Mr. Blamire's statement, in one parish containing 2,831 acres, there were (in 1844) 2,315 pieces of open land which included 2,327 acres, giving an average size of one acre (Evidence, Select Committee, p. 17, q. 185); (2) by fields of nearly equal size arranged in three long strips and subject to various customs of tillage, the most universal being the fallow observed by each of the strips in successive years; (3) by 'shifting severalties' of arable land, which were not, however, of frequent occurrence; (4) by the existence of certain rights of pasture over the green baulks which prevented their removal. The portion of the domain kept in grass was represented: (1) by 'shifting severalties' of meadow land, which were very frequent, the modes of successive allotment being also very various; (2) by the removal of inclosures after hay harvest; (3) by the exercise, on the part of a community, generally larger than the number of persons entitled to enclose, of a right to pasture sheep and cattle on the meadow-land during the period when the hay was not maturing for harvest."

"If we begin with modern English real-property law, and, by the help of its records and of the statutes affecting it, trace its history backwards, we come upon a period at which the soil of England was occupied and tilled by separate proprietary societies. Each of these societies is, or bears the marks of having been, a compact and organically complete assemblage of men, occupying a definite area of land. Thus far it resembles the old cultivating communities, but it differs from them in being held together by a variety of subordinate relations to a feudal chief, single or corporate, the lord. I will call the new group the manorial group, and though my words must not be taken as strictly correct, I will say that a group of tenants, autocratically organised and governed, has succeeded a group of house-holds of which the organization and government were democratic. Leaving the meadows and turning to the lands under regular tillage, we cannot doubt that the free-holders of the tenemental lands correspond in the main to the free heads of house-holds composing the old village community. The assumption has often been made, and it appears to be borne out by the facts which can be established as to the common fields still open as comparatively lately enclosed. The tenure of a certain number of these fields is free-hold; they are parcelled out, as may be shown to have been in the last century parcelled out, among many different owners; they are nearly always distributed into *three strips*, and some of them are even at this hour cultivated according to methods of tillage which are stamped by their very rudeness as coming down from a remote antiquity. * * * The *three-field system* was therefore brought by our Teutonic ancestors from some drier region of the continent.

It is a very remarkable fact that the earliest English emigrants to *North America*—who, belonged principally to the class of Yeomanry—organised themselves at first in village communities, for purposes of cultivation. When a town was organised, the process was that 'the General Court granted a tract of land to a company of persons the land was held as property in common.'

In *Ireland* the old village system prevailed, and it was owing to landlords of the Cornwallis type endeavouring to oust the peasantry from their old hereditary lands, that the land war of three centuries has lasted to the injury of both countries and the nourishing Phenianism in America. On the village system, formerly existing in Ireland, similar to the Indian one, Mr. Campbell has stated what will appear very strange to many Englishmen.

In *Germany*, this village system prevailed as shown by Von Maur's Researches. The township was "an organised self-acting group of Teutonic families, exercising a common partner-

ship over a definite tract of land, its mark, cultivating its domain as a common system and sustaining itself by the produce." Sir H. Maine points it out as existing in Tacitus' time under the name of *vicus*. The German system, consisted of the heads of families, standing in a proprietary relation to common property in a district which was divided into three portions,* owned in common and appropriated according to the number of families with a periodical re-distribution.†

In *America* the principal of co-operative farming is coming into practice, being found to contribute materially to the prosperity of the small farmer.

I shall now enter into details of the Indian system. The *Hindus* when they entered India appeared to have brought with them Municipal Institutions. One of the earliest notices we have of them is in Menu, 3,000 years ago, referring to the king he states:—

Let him (the king) appoint a lord of one town (village) with its district, a lord of ten towns, a lord of twenty towns, a lord of a hundred, and a lord of a thousand.

Let the lord of one town certify of his own accord to the lord of ten towns, any robberies, tumults, or riots which arise in his district (township) which he cannot suppress; and the lord of ten to the lord of twenty.

Then let the lord of twenty towns notify to the lord of a hundred, and let the lord of a hundred transmit the information to the lord of a thousand townships.

Such food, drinks, and other articles as by law should be given each day by the inhabitants of the township to the king, let the lord of one town receive as his perquisite.

Menu's idea of lauded property was a very radical one, akin to that of Mills and his School of Economists:—

"Sages who know former times consider this earth (*Prithivi*) as the wife of King *Prithi*; and thus they pronounce cultivated land to be the property of him who cut away the wood, or who cleared and tilled it, and the antelope that of the first hunter who mortally wounded it."

We have a recognition of village boundaries:—

"On all sides of a village or small town, let a space be left for pasture, in breadth either four hundred cubits (200 yards), or three casts of a large stick and thrice that space round a city or considerable town."

Within that pasture ground, if any cattle do any damage to grain in a field unenclosed with a hedge, the king shall not punish the herdsman.

* This three-fold division exists in Russia, it allowed of each field being fallow once in three years. In England the common fields were generally divided into three long strips belonging to a small division to different proprietors; in one case the pasturage was 80 acres in a strip only three yards wide. The periodical re-distribution has prevailed wherever the Aryan race has spread.

† See *Die bürgerliche Gesellschaft von Riehl* which treats of the municipal system in Germany at full length, also Baron Steins *Leben*, he was the Wilberforce of the German peasant, but for his efforts in emancipating the peasants, Germany would not be the country she now is.

Its state in subsequent times is fully described by Colonel Briggs and Grant Duff. The former in his *Land Tax* enters fully into the question of the village system in olden days, and he gives its constitution.

"Each village in India contains within itself the seeds of an entire Republic or Government; wars, deluges, pestilence or famine, may break it up for a time, but it has a tendency to re-unite which nothing can prevent. It consists of an agricultural corporation owning all the land, at the head of whom is a chief *elected by the corporation*. It has also at least one individual of all the crafts necessary to agriculture and essential to the comforts of rural life. It consists of a head of the village, originally elected by the people, whose office is confirmed by the king and is hereditary in the same family. This officer in the ancient law books is termed *Gram-Adikar*,* while his deputy or record-keeper, usually of the class of Brahmin, is styled *Gram-Lekhak*. The other village officers are denominated *Balautá*, and are *twelve* in number; viz.: the carpenter, the blacksmith, the shoemaker, the mhar (watchman and porter), the cordwaiver, the potter, the barber, the washerman, the priest of the temple, the school-master and astrologer, the bard or village poet, the distributor of the water. Besides these, there are twelve others denominated *alautay*. Part, if not the whole, of these officers exist in every village from Ceylon to Kashmir.† The land belonging to every township is accurately defined, and the village officers above-mentioned are retained on the spot by the assignment of a portion of it to each. These lots are usually situated on the borders of the village limits, in order to give to the hereditary officers a perfect knowledge under all circumstances of the boundary of the township. The whole land seems originally to have been divided into ten, twenty or more shares, each bearing the names of the first settlers. The Government portion was originally paid in kind, and its amount was taken from the gross produce, estimated according to the quantity of seed sown, or according to the actual crop. Each cultivator also contributed something as fees to all the village officers, who received these fees in addition to the lands they occupied free of tax to the king.

The *Gram-Adikar*, or village may or originally elected by the people, was at the same time the representative of the inhabitants

* The *Gram-Adikar* is the Bhumea of the Rajputs, the Reddy of the Northern Sirkars, the Talkari of the Mahrattas, the Nayr of Kanara, the Mirasidar of the Karnatic, the Jeth rayat of Bengal, the Patal of Gujerat.

† It is no longer the case.

and of the Government. He decided disputes, either in person or by convening a court of arbitration: he was the head of the police; and *the whole community was bound to produce to the Government either the property or the thief, in case of robberies, and the guilty in more serious cases, such as of murder.* Besides the government tax an extra contribution was made for village expenses, not unlike that of the parish rates in Europe. The most minute details of the transfer and sale of land, of rents and contracts, as well as of receipts and disbursements, were recorded by the village clerk, or *Gram-Lekhah*, under authority of the *Gram-Adikar*, whose accounts are always open to inspection. Thus each village was in itself a small State, several villages formed a district, over which also presided a chief denominated *Desh Adikar* and under whom was also a record-keeper, denominated *Desh-Lekhah*. The former superintended all the villages of his department, as the *Gram-Adikar* presided over the concerns of his village; and the *Desh Lekhah*, received from the village clerks their accounts, and presented an abstract to the Government. These latter officers were usually conciliated by the villages, by assignments of land from each, and were paid by the Government by a percentage of the collections. The proportion of each remuneration was not defined, and seems to have differed in various parts, though for the most part a tenth of the revenue divided between these district chiefs, appears to have been the fee of office."

As the *Bhaiband** or brotherhood this village system does not seem to have existed among the *aborigines* who occupied the plains and were reduced by the invaders to the condition of serfs or the outcast watchers of villages. Menu at a later period doomed them to have their abode out of towns; their sole property to consist of dogs and asses. The *Chandal* was to be the slave of the Brahmans, though these men entering India as hunters and herdsman, formed large communities and founded kingdoms. We have them in Bengal as *Beng*, who gave the name to Bengal and extended their influence up to Delhi; many are now Mahomedans. They are out-castes, but very brave. Numbers of them live near Dacca; the *Tirhus* were expelled from Tirhut by the Domes who once held Kumaon; the *domes*, once ruled from Kumaon as far as Kuttak; Gondwara, one of their most ancient kingdoms, was under the patriarchal rule of chiefs. The civil institutions of the aborigines are patriarchal, while those of the Hindus are municipal, though the aborigines were and are

* The Biblical idea of a separate church was implied in this brotherhood equivalent to the Saxon one of parish.

very tenacious of their rights to the soil as the Sonthal and Kol rebellions have shown.

The institution of common property in villages and of periodical redistribution is now decaying in Northern India; the usurer and shop-keeper have penetrated the chinks of the village armour.

We shall now notice the village system of Madras being indebted for our information to a high official there deeply interested in the rural population.

The village system prevails throughout the Presidency of Madras, except in the districts of Malabar and Canara. The whole of the country was parcelled out into villages, and all the lands of every village were the absolute hereditary property of the inhabitants. The only reservation which, so far as is now known, was in regard to the occupation of the waste lands of the village,* for while the rights of the villagers to these lands as pasture was undoubted, it was necessary that the permission of the ruling power should be obtained before they could be cultivated, but, once cultivated, they became, like the other lands of the village, the absolute property of the hereditary villagers. Every village was divided into a certain number of original shares, and the number of shares appears to have been governed by the number of families originally settled in the village. Each share was a saleable and divisible property, and it frequently happened from the action of the laws of inheritance and sale that while, in some villages, in consequence of the original families having died out, or having sold their shares, several of the original shares were held by one person, in others one original share was divided among several persons or families.

In every other part of the Presidency, the village system forms the basis of rural society, and has given its character to the state of property and landed tenures throughout the country.

But while in the main an entire identity of the principal existed, there seems to have been a good deal of diversity in the circumstances of this institution in different parts of the country. In the Telugu ceded districts, Bellary, Kuddapa, Kurnal, the villages concerns were managed by single headmen. It is probable that self-defence, at least in later years, brought the village communities more or less under single headmen.

* This assertion of proprietary right of the uncultivated area of the village was very stoutly resisted by the brotherhood of *Mirasadars* or hereditary co-sharer proprietors in some parts of the country in the earlier parts of this century; but the Government refused to admit their claim beyond allowing to them the right of pre-occupation before any outsider who might wish to take unoccupied land for agricultural purposes within their respective villages.

Among the Tamul nationalities in the south, and likewise amongst the Telugu races on the northern and coast part of the Presidency we find village communities like as in the Agra Presidency taking the form more extensively of brotherhoods, in which several families hold a co-equal position. In these parts, and more especially amongst Tamul nationalities, the area of the villages is much smaller and though in a fair proportion of these villages, single proprietors hold the *quasi* ownership of the entire village, in the great bulk of them the land is being much sub-divided. In some, the ancient shares or *pungu* are still traced, with their distribution of bad and good, and the families of the old co-sharers and their transferies are the acknowledged proprietors of the bulk of the land. But in others all trace of these original sub-divisions have been lost, and the land is distributed amongst a number of small peasant proprietors who are practically free holders, or to use an English parallel copy-holders under the State as Manorial Lord.

The precise degree, but as before said under the Ryotwari system, the possibility and necessity of continuing this state of things have both disappeared, and the property in *cultivated land* is absolute.

The use of uncultivated land and stubble after the removal of the crops for purposes of pasture is practicably communal throughout the country, and the village woodlands have from time immemorial been subject to communal uses for firewood, timber for houses and farm buildings, implements, and the like.

The boundaries of each village are very carefully ascertained and zealously maintained; in most parts of the country a hereditary communal servant is maintained for observing and preserving intact the village boundary.

The Government asserts a proprietary right in the unoccupied waste, subject however, to this condition that when taken up for agricultural purposes by the ryots, the proprietary right passes to the occupant. He is not a mere tenant. If he withhold the revenue demand, the State has the right of a first creditor on the property and may sell the land.

The precise bearing of the village system on the internal social condition of these little societies has been very inadequately examined. In almost all parts of the country, there is a village purse for the discharge of communal observations, for the village pagodas, &c., &c., the religious ceremonies, village alms givings, amusements, fees and presents to public servants and the like, to which all contribute and which is managed by the heads of the community.

The reasons of the *decay* of the village system in the Madras Presidency are in the first place the State under a Ryotwari system recognises no common influence on the land ; it deals direct with each peasant proprietor, and herein has set aside communal administration and communal responsibility.

In the second place, the English Government resumed in the early part of the century, the small contributions in kind which were made for the annual repairs of tanks, and works of irrigation, and adding them to the revenue demand have undertaken nominally, for they do not fulfil the obligation, the repairs and improvements of communal works which were formerly a matter of joint interest and a bond of union among the village community.

And lastly, the Government have treated the more important members of the village services, that is, the headman, village accountant, watchman, &c., as *State* servants and by occupying them largely in the collection of revenues have weakened effectually the people's interest in their maintenance, and the dependence of these persons on the village communities. Further, a very serious blow is now being inflicted throughout the country by destroying the individual recognition of the ancient Hindu villages. With a view to increase the funds available for the payment of the different members of the village service, the Government are clubbing together several villages and appointing one set of servants for the union ; ere long the Indian village may be a thing of the past, and an English union will take their place.

A Madras civilian in observations on land tenures give the following account of the threefold division of the land in the Madras Presidency.

The lands of every village which were held in severalty of the owners of shares were divided into three classes, and the right of a shareholder in each class was precisely the same. The first class was the uncultivable waste land, the second was the actual land in cultivation, and the third was the cultivable waste land. The first included the site of the village, its suburbs, the burial-grounds, all rocks, beds of rivers, tanks, and water-courses, and for this land no tax whatever was paid, though the shareholder's right in the quarries, mines, or fisheries which might be found in it, was unquestioned. In the second class were included all the lands of the village which were ordinarily brought under cultivation, and a certain proportion of the produce of these was the property of the State. The third class was untaxed until cultivated, and in that case it was at once transferred to the second, but the shareholder's rights to the pasturage, firewood, or other profits derivable from this class of land, was as complete as his right in the cultivated lands.

In the North-West Provinces of India, which are so much ahead of Bengal in the condition of the rural population, the land was generally owned by large families or tribes who held separate portions within the common boundary : each man was the

proprietor of his own lot ; responsible for his own portion of the revenue assessed on the whole property, he had a voice in the commune, he may have under tenants, but they cannot vote though they have a right of occupancy. When the Government made a settlement with those people, it was on the spot by juries drawn from the neighbours under the superintendence of the settlement officers, at a meeting held in the open air. The ryots elect the head men who transacts all revenue matters between them and Government. This system "has converted a needy, plundering peasantry into a well clad, well fed, well conducted body of men. The people are well off and prefer the profits of honest industry, so that the crime of robbery by open violence has almost disappeared in the North-West Provinces. It continues rife in Bengal where the cultivators are all subject to be rack rented."*

One of the most satisfactory measures in the North-West is the registration of the peasant's rights by the Government ; one well acquainted with the subject in an article published in the *Calcutta Review* on the Village Settlements of the North-West thus states regarding it. "To English ideas, it might appear almost preposterous in theory, and impossible in practice that a Government should undertake the Herculean task of recording the names, rights, interests, and holdings of every landholder ; and every cultivator in a country held by peasant proprietors, parcelled out in minute divisions, and containing seventy-two thousand square miles (that is, as large as England and Scotland put together), comprising eighty thousand *muzas* (townships or villages) with an agricultural population of between fourteen and fifteen millions. Besides this, every field in these provinces is to be mapped and classified according to the produce it yields. In short, Government possesses just as accurate and detailed information regarding every state in these provinces, as is possessed by any landlord or farmer at home, regarding his individual property. Organic as the undertaking may appear, Government is steadily persevering towards its accomplishment. Much has been already done, and final completion cannot be very far distant."

The *Bombay* village system is amply given in detail in Elphinstone's *India*, Malcolm's *Central India*, Grant Duff's *Mahrattas* and Briggs' *Land Tax*.

In the *Bombay Presidency* we find it reported in 1821 respecting the villages. "The mukuddum is "the key stone"

* See a valuable work "The Land Revenue of British India" by T. H. Robinson, 1858.

by which the other (village) materials have remained compacted. He was, and is still, a magistrate by the will of the community as well as by the appointment of the Government, he enforces the observance of what in England would be termed the bye-laws of the corporation; he formerly raised by contribution a sum of money for the expenses of the corporation as such, and for the support of his own dignity as its head; he suggested improvements for the benefit of the association, and marshalled the members to aid him in maintaining the public peace; he dispensed and still dispenses civil justice as a patriarch, to those who choose to submit to his decision as referee or arbitrator, or he presides over the proceedings of others whom either himself or the parties might nominate as arbitrators in their disputes. His privileges of drawing on the purses of the corporation for village saderwarid expenses, appears not to have been in any way controlled, until the time of the settlement of the kumal in A. D., 1758 and 1760; whence the village saderwarid takes its place in the jumabundy settlement of Government, which only then seems to have taken on itself the right of regulating this exaction, and keeping it within bounds. I enclose a list of the authorized items it comprised when thus brought to light, as extracted from an account just after the kumal was established. The mukuddum, in virtue of his being president of the corporation, originally had conceded to him the management of its affairs, and the regulation of the village feasts, churches, and corporation dinner; and like most other such presidents, he turned the money of the corporation to his own advantage, and by degrees introduced a new item or increased the amount of an old one, until he burdened his corporation pretty heavily: a good reason why he should not be allowed to do so till the end of time."

"In a country like the *Deccan*, subjected for several centuries past to perpetual revolutions and disturbances, many villages must have found the benefit of their being thus constituted into a society; where all the members were bound to support each other, and to share in the misfortunes, and to be at last relieved from burdens by the success of each other. The spirit of association is attested all over the country by the walls round villages, and by the brave defence of them against even large enemies. It is remarkable that this concert of design has never tended to the erection of public works that would have improved the agriculture of the country. The chance of violent disputes about the participation in such benefits may have been one obstacle, and the fear that the demands of Government would have been increased, may have been another."

We have thus far glanced at the antiquarian and historical point of view of the subject we now proceed to the practical part and the nature of the village system in its various compartments—of the village watch, the village chief, and the village jury. In Bengal, the Municipal principle is of great consequence on the maxim of union being strength, the village commune ought to be to the ryot the bundle of sticks. Of course, it would take considerable time to bring it into satisfactory working, but everything must have a beginning.—It would eventually check some great evils, in giving important aid where the police system is a signal failure, the detection of crime—it would prove a bulwark against that corroding evil of Bengal the grasping and black mail of subordinate agents who prey both on the landholder and peasant, without remorse, fleeing both. The revival of the office of *Pátwári* or village registrar is contemplated by the Bengal Government, and would be a great boon, he would record the subordinate rights in land; as village notary he would be a good source of information giving a clue through the labyrinths of the sub-division of property, no trifling work in Bengal where a mango tree is sometimes divided into sixteen shares. The *Pátwári* would also serve as a link between the Government and the peasants, and the revival of his office would help to remove what is a stigma to Bengal contrasted with other Provinces, *viz.* Bengal has not been able to furnish to Dr. Cunningham, the Sanitary Commissioner, any vital statistics, though the Punjab and even Burma have contributed their quota. Village school masters might in some districts be utilised as *Pátwáris*. Lord Moira, sixty years ago, revived the office of *kánungo* or village registrar, but it fell into disuse owing to zemindary influence; it appears that at the time of the Permanent Settlement, the majority of officials were in favor of retaining the *kánungo*, but Lord Cornwallis vetoed their proposal.

History tells us what the Municipalities of the middle ages did on the banks of the Rhine, and similar benefits may be reaped on a smaller scale on the banks of the Ganges; while in those days of change and revolution, it is important to remember the observation of Haxthausen that the rural population forms a dam against the flood of a revolutionary spirit.*

While in Bengal the old village police were of some use in

* Colonel Galloway in his "Observations on the Law and Constitution of India," remarks with reference to existing Municipal Government in Bengal.

"In Bengal, where shall we look for the constitution of an Indian village? The brotherhood, all independant of, but all interested about one another; giving and receiving mutual aid, mutual kindness, sympathising with, and receiving consolations from one another; confident and secure in their possession, on the simplest of all tenures, the easiest perhaps, of all terms, a definite and moderate share of their labour, as a return

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the detection of crime and might have been reformed, a new police has been substituted useless in the detection of crime, hated by every honest man and supervised generally by Europeans who know little of the people or language—it has been in fact a refuge for destitute Europeans. A Bengali newspaper gives what is generally the native view of it—a correspondent of the *Hindu Hitoishini*, writing from the town Serpur, says:—"We all know, and it is written in law books also, that policemen are guardians of the peace; but we do not see this put into practice. The rule is, they ought to go about at night in all directions and keep a look-out on what is going on, but they do it not. They are almost always to be seen by twos and fours at the doors of houses of ill-fame."

The *Chaukidari* or village police system has occupied the attention of the Bengal Government last year, and has led to the enacting a law by which the villagers have restored to them the election and payment of the rural police.* Mr. McNeil of the Board of Revenue has written an elaborate report on the village watch in Bengal. A committee of the Legislative Council sat on the subject and the following is some of the information they furnished. "The Chaukidar was originally purely a village servant, employed for the protection of crops and property of the villagers. In some places, he was paid altogether by the villagers themselves, in others he was supported by a small assignment of land: but, however, remunerated, he was exclusively a village servant, and was employed only upon village duties. With the State he had no concern, beyond being

to the State for protection. If sickness overtook one, he relied on the help of his brother; if death left a widow or an orphan, in every house the fatherless had a father, the widow a protector. The accumulated bones of generations were mingled in the same cemetery, or consumed at the same funeral pile, and the pious peasant fancied that the pure spirit of his father yet hovered around his peaceful abode."

Mr. Fortescue, in his report on the Delhi Territory, 28th of April 1820, gives a description of the village community; which as it corresponds with the above, leads to the belief that, as yet, the demolition of the ancient frame of society is limited to the permanently settled districts of the Lower Provinces. "If," says that intelligent officer, "a sharer (of the village) die, the other sharers are bound by an acknowledged principle of morality and duty to take care of the widow and children; especially to get daughters married. The widow may occupy the land, and the other sharers will assist her."

* The Government have lately published a report of the Rajshahye district in which the Act is working well. "The members of the panchayats have as a rule behaved well. The people were eager to take advantage of it: the people are obliged to pay the chaukidar regularly, and they insist on his keeping watch in return for his pay." One of the Deputy Magistrates reports "a new law is always regarded by the people of this country with suspicion, but when they see that the change is all for the better, that representative men in the villages manage and control the chaukidars, and that Government have not the most distant idea of deriving any benefit from the surplus at the credit of the chaukidari fund; they will vie with one another to serve on the panchayat, and hail the act as a decided improvement."

the link of communication in matters connected with crime between the village and the constituted authorities of the country. The only person, besides the village community, who had any claim upon his services, was the village zemindar, to whom in many instances, the right of nomination and dismissal belonged. It is not difficult to imagine how this right was acquired. Where the zemindar had granted land for the maintenance of a chaukidar to guard the crops and property of the villagers, he would naturally be so far interested in the appointment as to see that the man who enjoyed the land duly performed the services required of him. A grant once made to a village would not of course be resumed; in thinly populated districts, it would hardly be worth resuming; but the grantor and his heirs would naturally retain the right of seeing that their grant was not misapplied." "The duties of village watchmen are shortly defined in Section 21, Regulation XX., 1817, and may be arranged under three heads:—

1st.—To make periodical and special reports at the police station.

2nd.—To arrest heinous offenders, and to give instant information to the police of the occurrence of any heinous crime.

3rd.—To keep watch in the village.

The penalty for neglect of duty or misconduct is dismissal from office by order of the Magistrate, and punishment under the general regulations for specific acts of criminality. The present position of the chaukidar has been thus described by a District Magistrate. "In this district the chaukidars are nominated by the mandals of the village, sometimes with, sometimes without the consent of the zemindar or his gomashtha. On the appointment of the chaukidar, a list is given him, containing the names of the villagers and the amount which each man has to pay. I have hardly ever found that any man contributed more than one anna a month. The rate generally varies from two pice to four pice a month. The assessment is in most cases glaringly unfair. The richer people in the village invariably pay far too little, while the zemindar and his gomashtha pay nothing at all. It is only in the large bazars and gunges that chaukidars are paid their wages in money; in the rural villages they are almost always paid in kind. Half their wages they receive in Bhadro, *i. e.*, the early harvest, and half in Pous, *i. e.*, the winter harvest. Owing to the inequality of the assessment, the bulk of their pay is levied from the poorer classes of the village, from men deeply in debt to their mahajuns, and who would be constantly on the parish did such a thing as a parish law exist. No wonder then that the chaukidar's

wages, nominally fixed at from Rupees 2-8 to Rupees 4, are always in arrears." In every village in Bengal, there is some one who is looked upon as the head man, whether from his position as patwari, paramanik, mandal, or other dependant of the zemindar, as on account of his wealth and character; there is no difficulty in ascertaining this; only ask and you are told at once. Most villages have a chaukidar of their own, but some have one in common: be that as it may, no Magistrate would have any great difficulty in getting a list of villages, with the names of the headmen, and chaukidars of each, in every thanna. All then that you want is a simple law, that the headman, and chaukidar of each village can be punished for not reporting a crime which has occurred in their village." "The appointment and dismissal of chaukidars should rest entirely with the panchayat, subject to an appeal to the Magistrate. It is necessary that the Magistrate should have some control over the action of the panchayat, otherwise chaukidars might be dismissed for really doing their duty. At the same time the Magistrate should avoid all petty interference, and should take care to leave to the panchayats the show and as far as possible the reality of power. As a rule, the chaukidar should be selected from the residents of the village." As Mr. Robinson observes in the Report we have already quoted, "the one great good of a village chaukidar is that he is a villager, and that being friends with his neighbours, he hears all the village gossip and knows all that is going on. We would not interfere in any way with his status as a villager. If he liked to hold land he should be permitted to do so, subject of course to the approval of the panchayat. *By giving the leading men in each village a recognised position, and by holding them equally responsible with the land-holders for reporting crime, we shall make them feel that they have a post assigned them in the general administration of the country, and that they cannot neglect their duty without incurring the penalties of the law.*"

Sir T. Munro states with regard to this class:—

"In every village in India there are hereditary watchmen whose business it is to guard the property of the inhabitants, and travellers from depredation, and to exert themselves in recovering it when stolen, and there is, perhaps, no race of men in the world who are equally dexterous in discovering thieves; they are maintained by the produce of an *enam* (tax free) land, by a trifling tax on each house, and by a small allowance from travellers when they watch their property at night; no war or calamity can make them abandon their inheritance;

if driven from it they always return again, and often live in the village when every other person has forsaken it; and this long and constant residence, together with their habits of life, makes them perfectly acquainted with the character and means of livelihood of every person in it.”*

We come next to the *Patel* or head of the village so called as being the official grantor of *pattas* or leases for vacant lands in the villages; under the Musulmans, he received the title of *mohuddum* or head. Colonel Sykes in his interesting paper “The Land Tenures of the Dekkan” gives an account of a meeting of the Public Authorities in six districts, comprising thirty villages, with the Deshmukh and Deshpandus (chiefs of districts) to decide a dispute about the *Patel's* office, it being one of great emolument and importance. The *Patel* was personally responsible for the Government revenue, he had power to fine and imprison, to seize criminally,—he presided in the village Council, superintended the village police and regulated its internal economy. Colonel Briggs gives the following as his duties. “The *Patel* is the hereditary mayor or chief of the village: his duties are two-fold; on the one hand, they are due to the community as the superintendent of the collections and disbursements of the village expenses; on the other hand, as the organ between the people and the State, as the representative. He is the chief Magistrate of the village court, the head of the police, the chief coroner on all inquests, and one of the principal landholders of the corporation. On the part of the Government, also, he aids in forming the assessment; in collecting the revenue, for which he is in some measure responsible, as also for all robberies, and for the production of criminals or enemies of the Government residing within his township. To exercise these functions, he must be armed with considerable authority, and possess the confidence of the Government and the village community.”

In Bengal the village chief will have to act between three different parties with opposing interests, the Government, the zemindar, and the ryot.

Sir T. Munro thus details the position of a *Patel* in the Madras Presidency as it was sixty years ago. The powers

* At the period of the Permanent Settlement, there were 50,000 pykes or village watchmen forming a relief of stationary village peons, everywhere indispensably necessary, maintained on an allotment of ten bigahs of ground to every individual. In other villages where there was no land for maintenance, the chaukidar was remunerated by voluntary contributions in cash or in kind from the villagers known by the name of *Chakrami*. These *chakran* lands have been appropriated by the zemindars, against this the ryots have protested, as the rent paid by the ryots of the present day represents nearly three-fourths of the produce of the land, though Menu has pronounced that the “cultivated land is the property of him who cut away the wood or who cleared and cultivated it.”

of the patel, as Magistrate, though not defined by any written law, are sufficiently limited by the custom of the country, to prevent their being converted into an engine of oppression. He has every facility for apprehending offenders, but he is rarely permitted to inflict even the most trifling punishment. In petty affrays or assaults, he may confine in cutchery for one or two days, and take bail for good behaviour. Where the conduct of the aggressor has been particularly outrageous, he may put him in the stocks for a day, or punish him with two or three strokes of a cane; but the stocks and the canes seldom resorted to. In offences of magnitude, such as house-breaking, robbery, or murder, he apprehends, examines, and reports, but cannot punish. The proceedings on such occasions, are usually as follows: when a robbery happens within the limits of the village, information is immediately brought to the patail, who, if robbery has been perpetrated by a gang, and resistance is expected, puts himself at the head of a large number of armed inhabitants and goes in quest of the bandetti; but if there are only one or two robbers, he instantly calls the village watchmen together, and despatches them in pursuit. They repair to the spot where the robbery has been committed, and are guided by such intelligence as they can obtain there. If they can procure none, they shape their course by their knowledge of suspicious characters in the neighbouring villages, or they endeavour to trace the mark of the robber's feet in the sand; and when it passes their own boundary, they shew it to the watchmen and patail of the village within whose limit it has entered; who are then answerable for the apprehension of the offender. But if he is taken within the jurisdiction of the village where the robbery has been committed, he is carried before the patail, who with the Kurnum (registrar) investigate the matter publicly, in a Kutchery."

The Bengalis recognised the importance of the Patel or Village chief's office as shown in the following proverbs :—*

1. The chief is king of the village.
2. Do not act lordly as the village chief.
3. Even if the story or drama is ended, begin it for the village chief.
4. He is like a fat-bellied village chief.

* The Bengali for a village head is *maral*, Sanskrit *mandal*, i. e., a circle: in some places he is called *mukh* as the mouth-piece of the king or government or *mokuddum* the head. The English word *Colonel* conveys a similar meaning, i. e., the *coronel* or crown of the regiment.

5. He is chief of a broken down village, *i. e.*, an assumed chief.

6. The village respect him not, yet in his own opinion he is the village chief.

The *Panchayat* or Hindu system of arbitration by a village jury of five or more persons selected by the parties themselves is one of the oldest Hindu institutions, existing long before the period of Alfred, when the English are said to have had a jury system first somewhat akin to the village council: the idea of deciding disputes by a council is one congenial to the Hindus.

Sir T. Munro, Governor of Madras, a man who gave special study to the people, as he lived among them, thus reports sixty years ago regarding the panchayat. "It appears that, under the Hindu administration there were no courts of justice, excepting the *cutchery* of the *patails* and *aumildars*, and that all civil causes of importance were settled by *panchayats*. The number of members composing the *panchayat* was not limited by any rule: it was five, ten, and sometimes twenty, but most usually eight or ten. There was no limitation as to the value in suits tried by *panchayats* assembled by the *patel* or the *aumildar*. It was left entirely to the discretion of the parties, who, if they thought that a sufficient number of persons properly qualified to give a decision, were not to be found in the village, repaired to the town in which the District *aumildars* resided, who ordered a *panchayat* either there or in other place that they desired. *The native who has a good cause always applies for a panchayat, while he who has a bad one, seeks the decision of a Collector or a Judge, because he knows it is much easier to deceive them.* The natives cannot, surely, with any foundation, be said to be judged by their own laws, while the trial by panchayat; to which they have always been accustomed, is done away. The code provides referees and arbitrators; but these are not what the native wants; he has most probably had recourse to them already; and when he comes forward to complain publicly, he expects a panchayat. Fully to understand the character and manners of the Hindus, requires one to have lived and been educated among them as one of themselves; and I conscientiously believe that, for the purpose of discriminating the motives of action and the chances of truth in the evidence of such a people, the entire life of the most acute and able European judge, devoted to that single object, could not place him on a level with an intelligent Hindu panchayat, which is an admirable instrument of decision."

It is also highly spoken of by Sir John Malcolm, another great Indian authority; in his *Sketch of the Sikhs*, after stating that,

"trifling disputes about property are settled by the heads of villages, by arbitration, and by the chiefs," he in a note to the word, "arbitration" adds, "it is usual to assemble a panchayet or a court of arbitration in every part of India under a native government, and as they are always chosen from men of the best reputation in the place where they meet, this court had a high character for justice." In the Sikh Empire, the panchayat held a prominent position; each regiment had its panchayat which acted as a Colonel did in an English regiment, but they were not adapted for military purposes. Equally under the Mahratta Empire, notwithstanding the lawlessness of its rule, almost all civil affairs were decided by the awards of a *panchayat* or arbitration regularly summoned from among the classes of merchants.*

With myself the panchayat or personally village jury is no more theory derived from books. I myself have seen in villages the advantage of this panchayet system. I have constantly employed it when I wanted a subject investigated, and I have been often surprised at the acuteness evinced by these simple people, and the shrewd way in which they sifted evidence. The panchayat is still used by Hindus in investigating offences against caste, and the penalties are fine or expulsion; the members may be seen sitting on a mat under a tree, by the roadside or in the market place, administering what Scripture calls justice by the gate, their decision is final, and should they for instance sentence a man who had lost a cow by accident, not to be shaved by the village barber, even a judge's order would not be sufficient to get a hair taken from his chin.

The following Bengali proverbs illustrate the value set on panchayat or native jury system :—

1. Whatever ten persons† meeting decide on, whether it is successful or a failure, there is no shame.

* The *Smṛiti Chundrika*, a celebrated work on Hindu law, gives a list of *Sabhās*, or courts of different classes composed of foresters, merchants, military, chosen by the parties themselves. *Grāmarāse Sabhā* composed partly of the villagers, and partly of strangers or of military or civilians together. *Grāma Sabhā* the village court where the *Mahajenams* or heads of castes met to decide disputes arising in the village city court. *Sreni Sabhā* composed of the lower classes of barbers; washermen, to decide disputes among themselves. These simple courts were like those of arbitration—settling matters in a cheap and simple way under a tree, thus avoiding the law's "glorious uncertainty and delay," and rescuing the poor man from the clutches of attorneys. The superior courts were composed of Brahmans, but even there, *Sabhāsads* or assessors were allowed, and some of them might be merchants who judged of the facts and law of the case whether the king or other officer presided in the court or no; in the language of the *Smṛiti Chundrika*, "the chief judge interrogates, the king executes, the assessors judge of the facts, and the law determines the punishment."

† The Village Council was often composed of ten.

2. If ten persons agree, then Bhagavan is a ghost.
3. If each person among ten gives a stick, it will make a bundle for one
- i. e., a joint-stock contribution.
4. To go in the steps of another is often easy.
5. Where ten persons are gathered together, God is in the midst.
6. If ten persons upbraid one, his life is vain.
7. I will go where ten go.
8. What ten persons say has a foundation.
9. The power of ten persons is equal to a lion's.
10. From the mouth of ten person's truth.
11. Ten flowers together make a bunch or nosegay.
12. If five persons are not entertained by him, he is not a householder.
13. If seven or five deliberate the work is done.
14. Seven thieves assembled can divide even peas.
15. If seven persons discuss, five will decide it.
16. Seven weavers work at a cloth, but each for his own interest.
17. A good person brings five persons to eat with him.

Thus far of the village system in India, we shall now glance at that of Russia. Hitherto Russia has been regarded from an Indian point of view as a mere military power; the northern Colossus swallowing up whole empires, while she on the other hand has looked upon us in the same light. The canal of Suez will, however, gradually have a great affect in altering this view, as it is bringing India and Russia into close connections of trade, a vast opening is presented to India in supplying Russia with cotton, tea, indigo, spices; the best indigo of Bengal has for some time gone to Russia, and 20,000 tons of cotton are exported annually. Trade will lead to travelling and social intercourse; and we see in the case of our American cousins how much trade checks warlike propensities on both sides the Atlantic. The *Delhi Gazette* has lately expressed a great truth on this question. "Instead of fighting the Russians we shall find it far more pleasant and more profitable to trade with them, if they have no objection. Bombay cotton and Hongkong tea have gone already by the Red Sea to Odessa, and thence by rail to Moscow. Thus we find a door open to all the markets of the Russian Empire. Let us hope that no misunderstanding or mismanagement may close it. The prospect to business men in India and China is at present magnificent. Nothing but political folly on one side or the other is likely to prevent its realization. To rival each other in the arts of peace is the true glory of nations." In this day of quick communication among peoples, the time is surely come when we may without jealousy look at each other's Empires, calmly acting in the spirit of those glorious words of Haxthausen, "both nations had received from Providence in this respective spheres of action, one and the same mission, that of spreading Christianity and civilization throughout Asia—Russia

by land, England by sea; sooner or later they must meet in that quarter of the globe, but not necessarily in a hostile attitude. By means of commerce both nations carry the produce of their industry into Asia, and disseminate the elements of modern civilization; in this manner also the manners and customs of life are gradually changing and preparing the way for the greater political and religious transformations which evidently await Central Asia.”*

Social questions relating to Russia are among those which may with advantage be discussed even in India, but none with more advantage than the village system of Russia. The village system is the foundation stone of the organization of all eastern Europe, wherever the Slavonic race have gained a footing, but Russia is the country where it has developed itself as the basis of all substantial reform. Hence, when the Czar began his great reforms, his principle was, if you are to have no revolution on high you must begin with reform from below. He took a widely different view from Lord Cornwallis and the feudal party—whose maxim was to work downwards. Had the Czar adopted the principle of feudalism, *i. e.*, working downward or, as it is phrased, filtering down to the mass,—serf-emancipation would have been the work of a century.

Russia has until lately been for two centuries the most autocratic country in Europe, and yet, she has had in her bosom a most democratic institution; village republics or rural municipalities, which have existed ever since the nation emerged from the plains of Central Asia and moved towards the setting sun. The equal division of property in the villages resembles the joint family system of the Hindus, with this important exception that in Russia, though there is a joint village possession yet there is individual cultivation and individual profit. Haxthausen remarks on this joint property in land. “Equal division springs from the most ancient constitutional principle of the Slaavs, that of joint and undivided family possession, and periodical sharing of the produce; this probably existed among all the Slavonian races, and is still to be found in Servia, Croatia, &c., where it is the practice, in some parts, not even to divide the land every year, but to cultivate it jointly under the direction of the “elders,” and only to share the harvests equally among the members of the commune. Equal division prevails in Russia, even among the private serfs,

* The last volume of the Royal Geographical Society of London's Proceedings contains several valuable papers written by Russians on Surveys and Explorations in Central Asia. Severtsoff on the Thian Shan range, Osten Sacken on the Trans Naryn country, Fedchenko on the Zaraphan valley are interesting contributions.

who in great Russia were formerly always, and still are generally, placed upon *obrah* (money tax). It is, however, somewhat modified in the case of those who have to perform *corvees* for the proprietor."

The village system will serve as the basis hereafter for a constitutional government of Russia, but the minute division of the land is opposed to any scientific cultivation of it and entails great waste of labor. This equal division has, like the joint family system of Bengal, a tendency to encourage idleness and to check improvements in agriculture, and it is not likely to last long. France and Ireland are being examples of its evils, but above all Bengal, where a mango tree has sometimes sixteen co-sharers. Even Miliutine the great exponent of the Russian system admits, "*L'Exploitation communale etant un usage elementaire, elle devra necessairement faire place avec le temps, a le profit individuel.*" In Prussia communal lands have been given up and it will soon be a similar case in India. Ekart in his valuable work on Russia has written much on this. Haxthausen has clearly shown the evils of it, the peasants themselves in parts of the country called the periodical allotment the *tchernoï peredel* or black allotment.

To Haxthausen in his "Russian Empire, its people, institutions, and resources," Europe is indebted for the discovery of the village system of Russia; like another Layard he went down to explore Russian social and rural life, and brought up as a trophy this village system, redolent of antiquity with the hoar of three thousand years upon it. The book has been extensively circulated in the French and German languages, and ought to find a place in every Indian library:* but it should be borne in mind, Haxthausen wrote of Russia twenty-five years ago. Since his time there has been a vast improvement. The serfs have been emancipated, and the village system is made the basis of all other reforms, gradually developing itself as a "bulwark of self-respect and well-regulated freedom, a system of self-government, that the people

* Haxthausen published, in 1869, another work on serf-emancipation in Russia. Monsieur Miliutine, brother of the Minister of War, has labored indefatigably in this subject, as have Prince Cherkaski, now Lord Mayor of Moscow, and Monsieur Samarin. Miliutine's work *Etudes sur la question de la abolition de servage en Russie* given a very valuable digest of the preparatory steps taken in serf-emancipation and in organising the commune. Miliutine has been to Russia what Thomason was to North India, the friend of the village commune and the peasants rampart against oppression. Bodemstedt's *Russische fragmente zur Kenntniss des Staats und Volkslebens* is also full of valuable materials.

Instances are known of men absent twenty years from his village, returning and claiming his share.

might be released from the despotism and avarice of the officials;" and as village municipalities in India existed long ere the Moslem invader set a foot on the soil of India, and enabled the humble peasant to feel that unity was strength, that by combination, the feeble could present a bulwark against feudalism in all shapes: so these peasant republics in Russia have done and are doing good services in their day. The peasants live on land of their own, protected by a chief of their own electing. The position of Russia in dreary wastes and vast forests renders combination necessary as a protection against wild beasts, marauders, and inclement skins. The soil is the golden link of union in a Russian community; the soil is owned in common, and in equal shares, all are equal. The head of the village is elected by the heads of families for three years; he presides over the local courts, levies fines, and is the only official who can of his own will inflict corporal punishment, and in conjunction with the heads of villages, he can deport a man to Siberia. I have myself attended those courts and seen a peasant fined for abusing his wife. The village tribunal can make a man an out-cast as effectually as any panchayat of Brahmans can, and a court of law can afford no redress; he remains a vagabond.

The land question is becoming the question of the day even in England—how to check pauperism and proletarianism. The land question of Russia is therefore worth studying in this point of view. The Russian view on land is admirably given by Haxthausen I, 132—34.

"The St. Simonians would abolish all private property in land, and the right of inheriting it, substituting only a life interest in its place. In Russia this arrangement actually exists. Among the people, individuals have usually no property in land, not even a certain fixed occupation; they have only a claim to the usufruct; there can, therefore, be no inheritance. The principles, however, which lie at the base of this social condition are different from those upon which the St. Simonians would establish their modern polity. They are completely national, and adapted to a Christian monarchy. According to St. Simon, the land belongs to the spirit of humanity, as the God of the earth. Every man is a temporary emanation from this Deity; and therefore, so long as he exists as an individual in the world, and has not yet flowed back into the universal spirit, he has a right to a certain amount of what the earth produces. This right, however, is wholly personal; he cannot bequeath it to his children, for those like all past and future generations are emanations, and have merely a personal, not an inherited claim to a portion of the earth's produce. The Russians, on the other hand, say that the earth belongs to the Creator, and has been granted by Him to Adam and his descendants. Successive generations inherited the possession; and their numbers increased, they occupied a greater extent of the earth's surface, which they shared under the Divine guidance in the world's history. The country now called Russia fell to the progenitor of the Russians; and his

descendants, remaining united under the head of their race, and thus constituting a people, spread over the territory which has thus by the providence of God become their property. The disposal of it, as in a family, belongs to the father, the head of the race, the Czar: an individual has a right to share in it only so long as he lives in unity with the Czar and his people. The soil is the joint property of the national family, and the father or Czar has the sole disposal of it, and distributes it among the families into which the nation has in the course of time been divided. A joint occupancy of the whole could only exist while the people led a nomadic life: when they became settled, a portion was assigned to each family, which occupied its share under a separate head. The right of the family thus arose in a manner quite analogous to that of the nation. The property is a family property, belonging equally, but undivided to all the members of the family—the father having the disposal and distribution of the produce. If a member insists on a division, he receives his portion, but loses all claim upon the joint possession; he is paid off and excluded, and henceforth constitutes a new family. The families thus remained for many generations under their respective heads, and became family communes: hence arose the communal rights."

I spent five months in Russia in 1863, mainly enquiring into the working of serf emancipation, it was my privilege to meet with some of those who were the leaders in carrying out the Government measures, and I found that the basis of all lay in land secured to the peasant on certain conditions, and the elevation of the peasant in the social scale by giving him according to the old Slavonic system a share in the village administration based on the elective system. The Russian commune has occupied many Russian pens,* it is the idol of the Philo-slav† party whose aim is to elevate Russia by her own indigenous systems. The reform party of Russia also base their other reforms on this. Haxthausen remarks on this subject of the Franco-Mania in Russia "nowhere are the dangers which accompany our modern civilization so evident as

* The estimation in which the *Mir* or village commune is held by the Russian peasants may be judged of by their proverbs. We select a few as illustrations from Dahl's *Posloviťssoi Russ* or 25,000 Russian Proverbs, Moskva, 1862.

1. The voice of the people is the voice of God.
2. What the commune has arranged is God's decision.
3. The commune is a great personage—a great work.
4. Over the commune there is no judge, God alone judges the commune.
5. The *Mir* is the surging wave.
6. The neck and shoulders of the *Mir* are broad—it will carry all.
7. The *Mir* sighs and the rock is rent asunder.
8. A thread of the *Mir* becomes a shirt for the naked.
9. What belongs to the *Mir* also belongs to the little son of the mother.
10. The *Mir* is answerable for the county's defence.

† The movements of the Philo-slav party are deserving of close attention; while the Pan-slavists are political in their objects aiming at the federation of all the Slavonic race under Russia as its head; the Philo-slavs are social in their views, they consider that Russia as a Slavonic country has her own special field, that she has been injured by the servile imitation of German and French liberalism and manners. The heir to the Russian throne belongs to the Philo-Slav party, which represents pretty much what the oriental party is in India.

among the Russians. In the educated classes there are many who have acquired the highest European culture ; they may be judged according to the proverb—‘ half philosophy draws a man away from God ; perfect philosophy conducts man to God : ’ when half culture touches the Russian he is ruined ; it is said that when he shaves off his hair, lays aside the kaftan, and puts on a European coat, he becomes a knave. The Russians who have acquired the usual West European cultivation are called lackered barbarians ; this is inaccurate ; they are no barbarians, but a healthy, vigorous, intellectual people, of noble race, religious and moral ; if however, they are brought suddenly into contact with and receive the taint of modern culture, their natural virtues vanish ; their religion and morals, simplicity, and honesty are destroyed, and nothing remains but the animal nature common to man. The Russian, however, then becomes worse than those who bear the poison of civilization more easily, from its having been longer united with their existing manners.”

The *Mir** or Russian village municipality is presided over by a *starasta* or elder, elected by the heads of families, he has to deal with the village lands, the poor, the police, schools ; the *starasta* in connection with the heads of families elected according to their amount of land, presides over the communal assembly. He is village judge and head of the police, he can fine to the amount of a couple of roubles and imprison for two days, but he is subordinate in these points to the district elder, and even the allotment of the land takes place in an assembly of the whole commune, including the women and children : there are in each commune skilful land surveyors,† without any education, but what has been acquired from the traditional habits of the place, who execute the work of division. Next on the scale is the *volost* as district assembly, composed of from 300 to 2,000 families, at their head is the *golova* or head aided by the village councils, composed of the *starastas* as village head, as well as the assistant *starastas* of the different villages. In matters of importance, he summons the district assembly composed of the different communities chosen from every ten heads of families : they have charge of taxation and recruiting matters, and control the officials of the villages. The *starasta* is subordinate to the Justice of the

* The Russian word *Mir* means world, and corresponds in meaning to the *mandal*, Village Chief, i. e., centre of a circle among the Hindus, whose sphere is a *mundus*.

† It would be well if we had that class in Bengal for the *amin* or native land surveyor is the plague of the country, his measurements are too often regulated by the amount of bribe he receives. The Government of Bengal is adopting a good plan to check this, by requiring a knowledge of land surveying from subordinate Government officers.

Peace or Honorary Magistrate.* Magistrates to the number of twelve are chosen from the district assembly which is composed of deputies from the village; their jurisdiction extends to civil matters under 100 roubles, and the punishing of trifling crimes; they have no control, however, over the landed proprietors who are under the jurisdiction of the regular police. This associating principle takes a wider range in Russia than in India, for in the latter country at the time of the mutiny, the peasants being isolated could not combine for the defence of order; in Russia on the other hand, every ten villages send deputies to form a *volost* or canton, and ten or twelve cantons form a district, the members of which are chosen by peasants, merchants, clergy, nobles, each apart, and each free.

At the top, crowning the pyramid, is the *zemstvo* or provincial assembly composed not only of delegates from *volost* or districts, who hold regular sessions and administer the affairs of a county, in matters relating to roads, education, prisons, fisheries, imperial taxation, conscription, spirit licences. These provincial assemblies have also charge of the construction and maintenance of public buildings, mutual insurances, the promotion of local trade and industry; materials required for the civil and military administration, postal arrangements, the levying of taxes imposed by law, the management of property, capital and incomes belonging to the country districts, proposals relating to matters of public local necessity. The Government with wise foresight are entrusting to them gradually enlarged powers, so as ultimately to form the germ of a real representative assembly in Russia, a House of Commons for which she is not yet fit. The Government find this system very convenient in eliciting public opinion and levying taxation, as well as an admirable training school for self-government.† The landlord interest is strong in the provincial assembly, the peasant interest

* The Juges de Paix, or Honorary Magistrates of Russia are 1,400 in number. They are elected by the community of the district from among the nobles, and landholders in that or the neighboring district, &c., they can fine to the extent of 300 roubles and sentence to three months' imprisonment. An appeal can be made from them to the bench of justices, and they cannot pronounce in any private matter between themselves and their own peasants, but must refer it to the decision of the Honorary Magistrate of the neighbouring canton. They have contributed most materially to improve the course of cheap and speedy justice in Russia.

† In looking through some files of recent Russian newspapers, we find the *zemstro* occupying an important position; railway projects have been submitted to their consideration, the Government have consulted them on the period of military service, and the classes it ought to embrace. In the district of Kherson the *zemstro* has taken up the question of store-houses for times of famine. The *zemstro* of Novo Amzenne in the Samara government, have voted 38,000 roubles for village schools: it has voted, on the whole, 152,000 roubles in the Annual Budget, out of these 61,000 are obligatory, the rest discretionary.

in the district assembly. An impetus has been given by them to railway extension, and their advice has been of great use as to the line of new railways. Nor have schools for the peasants been overlooked by them.

Hepworth Dixon in his 'Free Russia,' a book which presents many interesting points relating to Russia and which well deserves perusal, though commenting freely on certain defects in those rural communes; such as—the exercise of arbitrary power by ignorant men, their tendency to ostracise an able man, their fostering a parish spirit, separating village from town.* Strengthening the ideas of caste and class, and placing the idle on the same level with the industrious—admits, however, that the village communes have some virtues. "A minister of war and a minister of finance are keenly akin to those virtues, since a man who wishes to levy troops and taxes in a quick uncostly fashion, finds it easier to deal with fifty thousand starostas (village heads) than with fifty million peasants. A minister of justice thinks with comfort of the host of watchful eyes, that are kept in self-defence on such as are suspected of falling into evil ways. These virtues are not all, nor nearly all. A rural system in which every married man has a stake in the soil, produces a conservative and peaceful people. No race on earth so clings to old ways or prays for peace so fervently as the Russ. Where each man is a landholder, abject poverty is unknown; and Russia has scant need for poor laws and work-houses, since she has no such misery in her midst as a permanent pauper class. The communes present an organic coherence and compact social strength which can be found no where else, and yield the incalculable advantage that no proletariat can be formed so long as they exist with their present constitution. A man may squander or lose all he possesses, but his children do not inherit his poverty: they still retain their claim upon the land by a right not derived from him, but from their birth as members of the commune. Every body has, a field, a cow; perhaps a horse and cart. Even when a fellow is lazy enough, and base enough to ruin himself, he cannot ruin his sons. They hold their place in the commune: when they grow up to man's estate, they will obtain their lots and set up in life on their own account. The bad man dies and leaves to his province no legacy of poverty and crime. The communes cherish love for parents, and respect for age. They keep alive the feeling of brotherhood and equality, and inspire the country with a sentiment of mutual dependence and mutual help."

(The principle of Canton and District Assemblies checks this.)

Russia has for its towns an institution on a similar principle called the *artel*, an association of workmen following the same craft for mutual protection and support; they choose their own chiefs, and regulate themselves by rules framed by themselves, inflicting their own fines and punishments. They are to the town what the commune is to the country. There is also one of a lower grade for cooks, petty shop-keepers, working men on the same principle, a Russian trades union; these are recognised by the Russian Government.*

This institution has been found very useful in Russia, you want a confidential clerk in an office, you obtain him from the head of the *artel* who is responsible for his character, and will compensate you in case of fraud by the employed, the *artel* being responsible for any defalcation; the member will hunt the defaulter down like a wolf.

Such an institution might be of great use in India where persons suffer so much from the fraud of servants. A proposal to this effect was made some years ago in Calcutta by an English Merchant, who had lived some years in St. Petersburg, and saw the good working of the *artel* there.

He thus describes the *artel* at St. Petersburg:—

“These “Artels” are establishments consisting of companies of from 30 to 70 members (peasants) from the interior of Russia, who are written up as citizens, paying to the Government a tax of Roubles 6, say Rs. 7-8-0, yearly, each man. A head or elder is chosen from them twice a year, one for the summer months, and the other for the winter: they also choose a secretary or writer from themselves, who is not changed very often. Every new comer as a member has to pay in a sum of Roubles 300, say Rs. 375, which sum is added to the fund of the Company, as also a certain percentage of the yearly earnings. These sums are deposited in the Imperial Bank, and out of which any losses that may occur are paid, the Company being responsible for every one of their members. After the percentage from the earnings of the Artel Chicks (*i. e.* members) is deducted and placed in the Bank, the remainder is divided among them in proportion to the time each of them has been in the Artel. For their labourage there is a regular rate according to which each merchant pays by the Artel; the accounts are rendered monthly. Each employer (merchant) has a right to have three Artel Clerks if he wishes, at the moderate rate of

* But the idea is not a new one to India: every class of tradesmen or mechanics has a *haudri* or head, he guides them as a *manji* does a boat, or a *sirdar* the bearers, he was a *aramanik*, the process was summary *viva voce*, no attorneys employed.

Roubles 11 per month each man, say Rs. 14, they providing their own board and lodging if need be. The duty of these Artel Clerks is to act for the most part as sircars do in this country, to see that the labourers do their duty in loading and discharging vessels and lighters, in passing goods through the Custom House, and in receiving and delivering goods from merchants' warehouses, &c."

The following is his plan for Calcutta:

"It is proposed to incorporate the coolies plying for hire on the river and amongst the warehouses of Calcutta, within boundaries to be defined, into a guild, or craft, having a monopoly of portrages and lumping within such limits, at rates for which they shall be held liable to give service subject to penalty in case of refusal. "The guild, so formed, to be under the direction of leading European and native merchants, who, in concert with the officers of the port, and keeping in view the profits of trade and the tonnage of exports and imports on the one hand, and the cost of food and other necessities of life on the other hand, should, from time to time, regulate the rates to be paid per ton *for the different classes of labour to be performed.*

The money so earned by the coolies to be realized by the Committee above specified, on bills to be presented weekly or monthly; and each cooly (or gang of coolies) to receive his proportion according to the number of hours worked, after deducting a percentage to be invested in Government Securities as a Reserve Benefit Fund for the purposes about to be described."

The advantages he points out are the following:—

"The intervention of middle-men being thus dispensed with, the cooly would receive either immediately in cash, or eventually, in benefit, his entire wages, after defraying the expenses of management; and the merchant, when all details are scheduled, would know to a rupee what the due charge on his goods for loadings, discharging, and portorage, should be; thus avoiding all dispute with banians, sircars, and landing agents, and becoming independent of their services.

The Benefit to the cooly would further be a certain provision for himself and those of his family dependent on his labour in the event of sickness, casualty, or stagnation of trade, and a guaranteed superannuation allowance in old age or premature infirmity."

We must now close this interesting subject, but the following points are deserving of fuller enquiry.

1. What traces of the village system are to be found in the Vedic writings.

Ditto in the Puranic.

Ditto in the Buddhist system.

2. Proverbs from various parts of India illustrative of the village system.

3. How is the *three-fold* division of village lands observed in various parts of India, it exists in Russia.*

4. How far is the plan of Sir B. Frere practicable in Bengal of having a species of popular representation, beginning with the village unit and having district assemblies as in Russia.†

* See pp. 18 regarding the practice in Madras.

† Sir Bartle Frere laid it down in a recent lecture that we know little of the public opinion of India, and that it is very desirable to know more of it. In two cases, the Afghan war and the mutiny, he contended, we should have avoided mischievous errors of conduct, had we known what that opinion was. India, he said, was no longer, as it used to be, an India of perpetual conquests; it is becoming not only a peaceful, but a thoughtful and an educated country; and if we want to govern it successfully, we must enquire its public opinion, especially in finance, which lies at the root of national contentment and discontent.

After adverting to the fact that the native press of India represented the merest fraction of Indian public opinion, Sir Bartle Frere proceeded to build up on Sir Donald Macleod's admission a plan for enabling the governing race in India to consult the opinion of the native population. He would begin with the Indian village, which already had its little council and its head-man; and this body he would encourage to make its wants and wishes known to the district officer by an occasional memorandum or petition. Once a year there should be a mere formal meeting of the village council to report briefly on local wants and requirements, and to elect delegates to the district council, the next step in Sir Bartle Frere's new organization of India. These district councils would resemble our country meetings in England. They should meet once a year, be presided over by the district native officers, who would report their proceedings to the superior authorities. To this district council Sir Bartle Frere would—let me, however, quote his own words—“entrust unreservedly the management of all district funds for roads, schools, and police, and I would consult them on all matters affecting or relating to the district. I do not mean,” he continued, “that I would put the initiative or the control of everything into their hands, but I would ponder well their advice, and hear their comments on every measure affecting them, and relieve all on every proposed re-settlement of the land on revision of other items of revenue.” Above the district council would come the provincial council, the composition and functions of which were thus defined by Sir Bartle Frere: “The provincial councils might consist of one or more representatives from each district council, and from each great city municipality not included in a district, all chiefs and larger jageerdars, all collectors and magistrates, and political agents and selected officers from the public works, educational, railway, and canal departments. They would be summoned annually, or oftener if necessary, and should be presided over by a revenue or political officer of the highest grade, such as the Revenue Commissioners in Bombay, or a member of the Revenue Board, or a selected Commissioner of Revenue in other parts of India. . . . These provincial councils I would consult unreservedly regarding the apportionment of all imperial funds allotted to the province, and I would adopt no great measure affecting the masses of the people until it had been thoroughly discussed in these provincial assemblies. To them I would also entrust the selection of a limited number of representatives to be summoned to the local legislative council, where their functions would be like those of the other members, not merely consultative or suggestive, but legislative.”

The brief discussion which ensued was adjourned when the Chairman of the Meeting, Sir Vincent Eyre, in expressing his admiration of Sir Bartle Frere's scheme, spoke of it as approved of, not only by Sir William Muir, but by the Viceroy himself.

5. The most difficult problem to solve in Bengal is—who shall appoint the village head—the people are weak and cowardly by nature, and ages of feudal oppression have not lessened this—on the other hand the Government functionaries are too far removed from the people, and too much encumbered with other questions to be able to nominate the proper persons; we believe the heads of families are the best after all for this, they may make many blunders in the beginning, but they will be gradually trained to self-government. We see in the case of Russia that in spite of the autoeracy and bureacracy of former years, popular election has now its sway.

APPENDIX A.

IN confirmation of the affinities of the Village Communities of India and Russia, we shall give some illustrations of their language affinities.

The Russian language—so important in connection with its rising, and singularly interesting literature—as well as in its increasing influence over Central and Northern Asia, has hitherto, by its strange characters and almost unpronounceable words appeared to Englishmen like the Chinese—a tongue requiring a life-time for its study; even the Germans, such indefatigable philologists, seem to have quailed before it; hence they are known in Russia by the title of *németz* or dummies, *i. e.*, those that do not know Russian.* Comparative Philology however, leading from the known to the unknown, enables them to scale the walls of even this fortress.

A Russian Dictionary has been published by Reiff on an etymological basis, giving the words in order as derived from Slavonic roots, with their affinities in other languages. Any one that will study the works of Bopp, Westergaard, and Benfey, on this subject, must rise with the conviction that the Russian priest, in the Kremlin, and the Brahman, in Benares, speak essentially the same language. Wedgwood in his Dictionary of English etymology has traced out the affinities between various English and Russian words. Russian writers, Homiakoff, Hilferding, have written on the affinity of the Russian language with the Sanskrit, but Dr. Dorn in his ‘*de affinitate Linguae Slavicæ et Sanscritæ*’ has enlarged fully on the subject, as has Bopp, in his *Vergleichende Grammatik*.

There are about 1,600 roots in Slavonic, the parent of the Russian; about the same number are in Sanskrit; one-third of these roots are similar in both languages, proving the respective languages come from a common parent. The grammatical affinities are strong in the cases, the pronouns, the verb substantive, the tenses of verbs. We select now for illustration some of the lexicographical points of resemblance in common words:—

<i>Russian.</i>			<i>Sanskrit.</i>			<i>Meaning.</i>
Muish	...	11†	Mush	...		Mouse.
Gus	...	10	Hānsa	...		Goose.

* On a similar principle to that of the Greeks who called all men who did not know the Greek tongue barbarians; when Russian peasants see two Germans talking, they exclaim wonderful,—see the dumb are speaking.

† The figures denote the number of Russian words of the same etymology or root.

<i>Russian.</i>			<i>Sanskrit.</i>		<i>Meaning.</i>
Vuidra	... 1	...	Utra	...	Otter.
Kukushka	... 4	...	Kokil	...	Cuckoo.
Sobak	... 2	...	Svan	...	Dog.
Nogot	... 26	...	Nakh	...	Nail.
Ust	... 16	...	Ost	...	Mouth.
Cerdtza	... 67	...	Hrid	...	Heart.
Desnitza	... 5	...	Dakshina	...	Right Hand.
Utrova	... 28	...	Antar	...	Belly.
Gorlo	... 24	...	Gal	...	Gullet.
Ruda	... 7	...	Rudhir	...	Blood.
Ruka	... 120	...	Kar	...	Hand.
Griva	... 12	...	Griva	...	Neck.
Nos	... 17	...	Nás	...	Nose.
Kost	... 35	...	Asthi	...	Bone.
Brov	... 4	...	Bru	...	Eye-brow.
Oko	... 28	...	Akshi	...	Eye.
Glava	... 54	...	Kapál	...	Head.
Dotcheri	... 5	...	Dubhtri	...	Daughter
Suin	... 11	...	Sunu	...	Son.
Brata	... 21	...	Bhratri	...	Brother.
Sestra	... 8	...	Svasri	...	Sister.
Otsá	... 30	...	Tatta	...	Father.
Mata	... 23	...	Matri	...	Mother.
Ionoi	... 7	...	Juvan	...	Young.
Stanin	... 47	...	Sthavira	...	Old.
Mújhá	... 38	...	Manush	...	Man.
Jhena	... 24	...	Jani	...	Woman.
Gospod	... 33	...	Pati	...	Lord.
Put	... 36	...	Path	...	Path.
Neba	... 15	...	Nabhas	...	Heaven.
Zemlio	... 60	...	Sima	...	Earth.
Doma	... 24	...	Dhāman	...	House.
Ulitza	... 6	...	Shala	...	Street.
More	... 17	...	Mir	...	Sea.
Dreva	... 27	...	Dru	...	Tree.
Gora	... 25	...	Giri	...	Mountain.
Svet	... 70	...	Svit	...	Light.
Med	... 26	...	Madhu	...	Honey.
Myeso	... 19	...	Māusa	...	Meat.
Voda	... 81	...	Ud	...	Water.
Yed	... 68	...	Ad	...	Eat.
Den	... 47	...	Din	...	Day.
Notch	... 24	...	Nisa	...	Night.
Zimá	... 14	...	Him	...	Winter.
Vesna	... 8	...	Vasanta	...	Spring.
Jhiv	... 120	...	Jiv	...	Life.
Malin	... 20	...	Malin	...	Small.
Tmá	... 21	...	Tamas	...	Darkness.
Imye	... 35	...	Nāman	...	Name.
Kidat	... 45	...	Kit	...	Throw, quit.
Bog	... 123	...	Bhagavan	...	God.
Dolgiya	... 58	...	Dirgha	...	Long.

<i>Russian.</i>			<i>Sanskrit.</i>		<i>Meaning.</i>
Svadu	... 56	...	Svadu	...	Sweet.
Nobin	... 53	...	Nava	...	New.
Ves	... 10	...	Visva	...	All.
Tchistui	... 55	...	Sutchi	...	Chaste.
Veli	... 34	...	Valin	...	Great.
Linbhui	... 90	...	Lubh	...	Lovely.
Milui	... 46	...	Mil	...	Mild.
Sukhoi	... 98	...	Shushka	...	Dry.
Tepliu	... 50	...	Tap	...	Hot.
Syedin	... 247	...	Sad	...	Sit.
Pit	... 100	...	Pi	...	Drink.
Idu	... 216	...	Etum	...	Go.
Dát	... 190	...	Dá	...	Gift.
Buit	... 135	...	Bhu	...	Be.
Dri	... 84	...	Dri	...	Tear.
Imu	... 283	...	Yam	...	Restrain.
Stat	... 340	...	Sta	...	Stay.
Ved	... 200	..	Vid	...	Know.
Znat	... 84	...	Jyná	...	Know.
Vertet	... 204	...	Vrit	...	Turn.
Dvá	... 61	...	Dvi	...	Two.
Trí	... 34	...	Trí	...	Three.
Chetar	... 28	...	Chaturtha	..	Fourth.
Pyet	... 20	...	Pancham	...	Five.
Shesh	... 13	...	Shash	...	Six.
Sedín	... 19	...	Saptam	...	Seven.
Vosem	... 12	...	Ashtam	...	Eight.
Des-yet	... 62	...	Dasam	...	Ten.
Sto	... 18	...	Sat	...	One hundred
Spet	... 72	...	Spad	...	Quick.
Ryedh	... 117	...	Radh	...	Arrange.
Stiunat	... 77	...	Shita	...	Cold.
Iskat	... 63	...	Ichha	...	Wish.
Dvig	... 65	...	T'vaj	...	Move.
Peku	... 92	...	Pateh	...	Cook.
Pasti	... 50	...	Pal	...	Feed.
Bit	... 160	...	Bad	...	Beat.
Meta	... 63	...	Meta	...	Aim.
Pluit	... 85	...	Plu	...	Float.
Nujda	... 98	...	Nud	..	Necessity.
Stret	... 98	...	Stri	...	Spread.

APPENDIX B.

THE national, or what we would call the oriental party in Russia, have of late years devoted themselves to investigations as to the origin and real nature of the social condition of the people—to folk lore in fact. Novelists like Tourgeneuf have done much to popularise the subject, and there is a work by Bodenstedt, called *Russische Fragmente*, which contains valuable information on this question. Russia in her development was patriarchal, very different from Europe which was feudal. I can only glance at a few of the leading oriental customs or opinions identifying the Aryans, both of India and Russia.

The Russians, as the head of the Slavonic race, are semi-oriental, and in consequence retain various customs and opinions which their forefathers brought with them when they emigrated from Central Asia to the fertile lands of Southern Russia: we give a few in illustration:—

1. *The seclusion of women.*—Some writers on India attribute the shutting up of women to the Mahomedan invasion—doubtless the Moslems increased that tendency very much—but it existed before as the whole spirit of Sanskrit literature, and native proverbs show, which dwell on the untrustworthiness of women left to themselves, exposed to the public gaze. Similarly in Russia women were secluded in the *zenana* and were only seen by their nearest relations; when they went to Church, they were veiled; the first inroad on the custom was in Moskva, where the women began to go to table after dinner only 150 year ago. The first time the wife of the Czar appeared in public, before the time of Peter, the Russians hung down their heads as she passed by. Peter the Great, when he came to the throne, introduced theatricals and games to bring the sexes together. In 1700 A. D., he issued an ukaz, forbidding the married and unmarried to wear veils at feasts, funerals, and on other public occasions. He gave parties at Court, and commanded the women to come dressed in European fashion. Before the days of Peter the Great, the women's apartments were called the *haram*; it required the stern spirit of that great reformer to compel the Moskva nobles to bring their wives and daughters into public and unveiled.

2. *Widows burnt on the funeral pyre.*—We have the testimony of Karamzin—the Livy of Russia: to this, he states:—"The old Russian historians relate the Slav women not wishing to survive their husbands, had the practice of being burnt with them on the funeral pyre."

3. *The dead were burnt in ancient times*, so Nestor, the father of Russian history, states.—See *Maritime and Inland Discovery*, vol. 1, p. 168.

4. *Early marriages.*—Marriages formerly took place before the age of puberty. Catherine the 2nd made 13 the legal age of marriage. An *ukaze* was issued by the Emperor Nicholas, prohibiting marriage before the age of sixteen. As one consequence of the old system, marriages were made by the parents, or by the *svati*, i. e., go-betweens; this has perpetuated in Russia to the present day the evil system of the *marriages de convenance*, and even now young girls are kept under great restraint before marriage. In olden times the bridegroom was never permitted to see the bride before marriage; in 1498, when the Emperor of Germany sent his ambassador to negotiate a marriage, he could not see the lady. Peter issued an *ukaze* in 1700 that the parties should see each other.

5. *The estimate of women among the peasants is very low.*—In making a census of the population, the peasants consider soul as equivalent with male only, and it was an old practice immediately after marriage for the bride to present to the bridegroom a whip as a badge of submission.

The Russian proverbs, so racy of the soil, illustrate this view as they are as sarcastic against women than proverbs of Hindu origin. We give a few :—

A woman's hair is long, but her good sense is short.

A woman and a goose form a market.

You might plunge a pole into a woman's head, it is of no use.

A dog has more sense than a woman, for he never barks at his master.

The hen is not a bird, nor is a woman a man.

I thought I saw two persons, but it was only a peasant and a woman.

The heart of a woman is like rust in iron.

The flattery of a woman has no teeth, but it will eat your flesh with the bones.

6. *Relics of the patriarchal system.*—A married son does not establish a separate household as long as the head of the family is living; two generations often live in the same house. The house is generally called after the name of the head of the family, though he may have been dead a century. The Russian applies the same term *batiushka*, father of the Czar, to his father or to the village chief; this feeling has much to do with the deep reverence the Czar is held in as the great father: hence every Russian, whether known to him or no, is hailed as a *brát*, or brother, equivalent to the Indian *bhái*. This may account for the submissiveness of the Russians to the *hukam*, or command, and the practice of kissing; in former days, guests at table kissed each other; and at Easter the Czar was bound to accept the fraternal kiss of a subject—the “kiss of peace.”

7. *The dress*, as still worn by the merchants, is *flowing*. Peter the Great found great difficulty in inducing the nobles to adopt close fitting garments. The women throughout Russia prefer red and glaring colors; the Russian word for red and beautiful is the same, *krasno*, so Persians and Arabs call white people red, i. e., beautiful.

8. The *wearing beards* is a strong mark of nationality. Peter the Great had a hard battle to fight, in order to persuade the Russian nobles to shave the beard.

9. *Nuzzurs*, or presents, on approaching a superior. Bread and salt in Russia supply the place of the Indian pán or betel.

10. **Polygamy* was very common in former days. Vladimir the first had ten children by an equal number of wives.

11. *Prostrations* in Church, touching the ground with their foreheads, the sign of reverence among orientals.

12. The *painted signs* over shops.—The advertisements of a tradesman are by glaring figures over a sign-board, representing his occupation and trade. In Central India, in former days, as few ryots could read, when they had to appear as witnesses, they signed their names with the symbol of their occupation, thus the astrologer drew an almanac, the carpenter a gimlet, the grazier a rope and sickle, and the cultivator a plough.

3.—*Indian Cooly Emigration.*

By MR. J. GEOGHEGAN, C.S.

THE earliest labour emigration seems to have taken place from the southern portion of the Indian Continent. A Tamil exodus to the Straits Settlements had begun before the end of the last century, and soon after the conquest of the Tenasserim Provinces labour began to flow thither from the other side of the Bay of Bengal. The emigrants to the Straits were employed both as domestic servants and as agricultural labourers, and indeed the sugar, spice, tapioca and cocoanut plantations of Penang have come to depend on Madras entirely for hands to cultivate them. Ceylon too has long derived a supply of labour from the Continent. From what date this latter stream of emigration or migration has been flowing, is not clear, but the great development of coffee-planting as the main industry of Ceylon is what has swelled that stream to its present volume. It has not been thought necessary to bring the emigration in these directions under any special control. Burmah is still, and Penang and Singapore were till 1867, an integral portion of the Indian Empire; while the proximity of Ceylon and the brief sea-passage (for the Tamils all followed the Paumben route), together with the fact of a considerable population of cognate origin being already settled in the island, led to the exemption of emigration thither from any peculiar restrictions. One consequence of this has been that the history of the Indian labour supply of these settlements is very imperfectly known. According to the last census of Penang (which absorbs by far the largest share of the labour emigrating to the group of small colonies scattered along the coast of the Malayan Peninsula and known collectively as the Straits Settlements), the Tamils numbered one-sixth of the total population, or 25,000 out of 150,000, and the average annual influx of Indian labourers is about 4,000 souls. It is, I believe, only recently that Government has become aware of the magnitude of the Ceylon emigration. It appears that

for each of the ten years ending 1869 an average number of 65,000 persons, of whom nearly 50,000 were adult males, left the Southern Presidency to work on the Singhalese coffee estates. The return stream averaged 48,000 a year; the difference over and above what is due to deaths in the island is absorbed in the resident Tamil population. The provisions of the local law which require the planters to maintain a record of mortality among their labourers, having been but laxly enforced, no accurate statistics of deaths are attainable; but from enquiries recently instituted there does not appear to be any reason to suppose that the death-rate is heavy. The extent of the emigration to Burmah cannot be accurately shown, but the Indian labour in that province seems to be at present confined to the sphere of domestic service and the miscellaneous work of seaport towns.

The first instance of emigration of which I have been able to find any exact record belongs to the year 1830, when a French merchant, by name Joseph Argand, obtained the permission of the Government of India to convey some 130 Indian artisans to the island of Bourbon, conditionally on each intending emigrant appearing before one of the Calcutta Magistrates and acknowledging that he went voluntarily and with full understanding of his contract. Captain Birch, then Commissioner of Police, in his evidence before the Emigration Committee of 1838, does indeed state his impression that labour was exported from India to Mauritius and Bourbon so early as 1819; and Dr. Mouat, in an account of a visit paid by him to the latter colony, expresses a belief that emigration dates from 1826. But I have traced nothing to confirm these statements, and in M. Argand's application to Government no reference is made to any prior instance of the like kind. At any rate, whether the first emigrants sailed in 1819 or 1830, the cases of emigration to regions more distant than Singapore or Moulmein were up to 1834 quite sporadic, and no distinct tide of labour traffic set in till in that year the abolition of slavery in British colonies compelled the sugar planters of Mauritius and the West Indies to look elsewhere for hands to do the work of the indolent and recalcitrant "Quashy." The Mauritius planters at once perceived that India was their most hopeful recruiting-ground, and a ship-load of some 40 Indian coolies reached that island in August 1834, the very month which witnessed the transformation of slaves into "apprentices" by Act of Parliament. The only control which it was at first attempted to

place upon the emigration thus initiated, was, to require intending emigrants to appear before a Magistrate at the port of emigration and to satisfy him of their freedom of choice and knowledge of the nature of their agreements. Even this small check was only applied by executive order, and as there was no penalty for neglect, many emigrants seem to have left the country quite unregistered. Altogether, between August 1834 and May 1837, about 7,000 emigrants left Calcutta for Mauritius. Of these, about half were probably "hill coolies," or "jungles" as they were called, that is to say, in all likelihood Oraon Kôls, the "navvies of India" as Colonel Dalton aptly designates them. Of the whole number, only about 200 were women. The emigration of this period from Bombay seems to have been very small; and from Madras no figures are forthcoming.

Meantime the necessity of enforcing some control upon the traffic was urged upon the Government from various quarters, especially by the authorities of Mauritius. Two members of the Civil Service, Messrs. Scott and Parry Woodcock (the latter, a name well-known in the history of Indian Jail reform), had recently visited that colony; and their reports, while on the whole taking a favourable view of the then position of the Indian emigrant, went to show that in certain points the system stood in need of regulation. A law was accordingly drafted by the Law Commission then sitting, and, in its ultimate shape as Act V of 1837, forms the first piece of legislation on the subject in the Indian Statute Book. The Act makes it penal to receive on board any vessel any native making a contract of service (native seamen and menial servants excepted) for labour to be performed abroad, without a permit to be granted by an officer appointed in that behalf, and such officer is bound to satisfy himself that the labourer understands the contract and desires to fulfil it. No contract for a term of more than five years is to be registered, and vessels carrying more than twenty emigrants are bound to comply with certain regulations as to space, provisions, water, medicines and medical attendance. The Act as first passed applied only to the "Presidency of Fort William," but a subsequent law (Act XXXII of the same year) re-enacted the same regulations for the whole of India. This phase of legislation was, however, destined not to have any long duration. The records of the emigration which took place under the provisions of the Acts of 1837 are defective and inconsistent. But according to what seems the most trustworthy account, there sailed from Calcutta, between May

1837 and August 1838, both months inclusive, nearly 8,000 souls, chiefly for Mauritius. British Guiana, Bourbon, Batavia and Australia also, during this period, drew small supplies of labour from India. The Australian emigration is the first and last instance of any *direct* exportation of labour to that Continent; but of late years a few time-expired emigrants from Réunion have found their way to Queensland. The proportion of women was infinitesimal. The uplands of Chota Nagpore contributed about one-third of this emigration. From Bombay the stream continued feeble. For Madras there is no record. But Mauritius is said to have imported 25,000 labourers in the four years from August 1834 to August 1838. As Calcutta and Bombay together do not seem to have contributed more than 15,000 during this period, the deficit of 10,000 may be taken to represent the whole emigration to that colony from Madras up to the later date. But a brisk emigration from the south to Bourbon appears to have been going on at the same time.

On the 10th July 1837, or little more than two months after the passing of Act V of that year, the abolitionists began to give sign of their suspicion of this new labour traffic. Mr. Fowell Buxton's first question was met by the assurance that the Indian emigrants in the colonies "were no more regarded as slaves than the House of Commons itself." But Lord Brougham did not rest satisfied with this, and in March 1838 delivered himself in the Upper House of a vehement philippic against the whole system of emigration from India, which he completely identified with the slave trade, declaring that he had "no choice but to act as he had done through the whole of his life, maintaining to the end the implacable enmity with which he had at all times pursued this infernal traffic." Under this pressure Lord Melbourne's government brought in a "Natives of India Protection" Bill, which passed in the Upper House, but was not pressed in the Commons, on the assurance that pending enquiry emigration from India would be forbidden. And in fact this had already been done; for the echo of the abolitionist agitation at home was not long in reaching this country, and the allegations upon which that movement was based deeply stirred the minds of Lord Auckland and his Council, and indeed of the Calcutta public generally. Minutes were recorded and public meetings held, and the upshot was that first by executive order, and afterwards by legislation, in the shape of Act XIV of 1839, emigration from India was absolutely forbidden, pending enquiry into the whole subject.

To carry out the necessary enquiry, committees were appointed

at Calcutta, Madras and Bombay, and the Governments of Sydney and Mauritius were urged to take the same steps in regard to those colonies. The Bombay Committee reported that no abuses in respect to emigration existed upon that side of India; indeed, emigration from Bombay could hardly itself be said to exist. The Madras report did not contribute anything of value in the enquiry, nor have I been able to trace any record of the investigations, if any were set on foot, in Mauritius or New South Wales. The report of the Calcutta Committee is a valuable contribution to the earlier history of emigration. This body was composed of six members, Mr. Theodore Dickens, Rev. J. Charles, Baboo Russamoy Dutt, Major Archer, Mr. Dowson, and Mr. J. P. Grant. After taking the evidence of Europeans and Natives, and examining the written records on the subject, the first three members, on 14thth October 1840, submitted their report, with the evidence on which it was based. That evidence relates altogether to emigration to the Mauritius. Broadly it may be said to have proved that very grave abuses had prevailed in India, emigrants having been, in too many cases, entrapped by fraud or compelled by force, and systematically plundered of nearly six months' wages, nominally advanced to them, but in reality divided, under pretences more or less transparent, among the predaceous crew engaged in the traffic. With respect to the treatment of emigrants on the voyage and at Mauritius, the evidence was conflicting. Reading it calmly now, I do not think it proved more than that there were some bad masters in Mauritius, and that some of the ship-captains employed in the trade were, from brutality or apathy of character, little fitted for the charge of coolies. But such moderate conclusions did not satisfy the three members who signed the report. They condemned the whole system in every stage, and expressed their conviction that no regulations would avail to prevent the like abuses. By preference they would have maintained the then existing absolute embargo upon all emigration. If this were not possible, nothing short of putting the whole management of emigration, from first recruitment to arrival in the colony of destination, under the superintendence of a paid department of the Government service, would have satisfied them. The expense attendant on any such plan would have been as complete a prohibition as any legal enactment, and this no doubt the committee perceived. In point of fact, the report of the majority, though most honorable to their feelings of humanity, bears in every line of it the evidence of a

foregone conclusion. Major Archer, the fourth member of the committee, went to Europe at an early stage of the proceedings, and no record of his views, if he ever put them into writing, is forthcoming. The fifth member, Mr. Dowson, was a merchant himself interested in the exportation of labor, and, as was perhaps only to be expected, refused to sign the report, and recorded a minute of absolute dissent. But the most valuable document called forth by the enquiry is the minute of the sixth member Mr. (now Sir) J. P. Grant. This minute contains a most elaborate and exhaustive review of the evidence and a full discussion of the policy which should guide Government in legislating upon the question. I extract the practical conclusions at which that eminent man arrived, as they appear to me to be, on the whole, the best exposition I have anywhere met with of the principles which should be followed in dealing with emigration.

“I conclude then that, as far as our information goes, the whole of the evils which attended the export of Indian labourers to our own colonies were casual, and may, by good regulation, be prevented for the future; that the direct advantages of free emigration are immense, whilst the indirect advantages are incalculable; consequently that free emigration from India to our own colonies ought to be permitted under such regulation in India and in the colonies as may afford a reasonable expectation of preventing the recurrence of the evils heretofore experienced. As far as Mauritius is concerned, I regard our information as complete, and therefore there can, in my opinion, be no reason to delay the opening of that colony beyond the time when the colonial laws and institutions shall be pronounced to be, in all that concerns this question, in a satisfactory state. Not having complete information in regard to our other colonies, I cannot conclude with equal confidence as to them; but I see no reason to suspect that any evils that may have been experienced in those colonies are not remediable by proper measures in the same manner as in Mauritius; consequently my belief is, that the conclusion applies equally to all our colonies. In regard to Bourbon, the only foreign colony to which Indian labourers have gone in large numbers, we have no information. There are, however, strong grounds for suspecting that abuses may exist there in a higher degree than in Mauritius, from the circumstance of Bourbon being still a slave colony. In my opinion, that fact alone affects the case very materially. The Government of that country has

shewn a strong desire to protect imported labourers by the enactment of protective laws. But the state of the law is a small matter compared with the state of the public feeling and the administration of the law, whereof we know nothing. I cannot imagine an island, of which the population consists of a few white masters, a large number of black slaves, and a large number of free black foreigners, being an eligible habitation for the last-mentioned class. The Crown cannot know that the Indian labourer there gets justice in all respects like a French labourer in his own country, and, if he do not, it cannot afford him protection. This is not the case of a few stray labourers leaving their country to go to a foreign land, a case which might certainly be disregarded by the law; but this is a case where British subjects would be annually exported systematically and by thousands. If, therefore, there is need of interference, the importance of the matter demands legislation. Since the prohibitory Act of the Indian Government, the exportation of labourers from Pondicherry has been stopped. If any British ports are again opened, Pondicherry may very probably again be opened. I do not deny that this is a point which is involved in some difficulty; but as our legislation will affect only our fellow-subjects, whose protection is our first duty, we have no right, merely because foreign interests are concerned, to refuse to legislate for them in such manner as is most conducive to their good, whether in the way of restriction, or in the way of relaxation.

“I believe, however, that it will only be necessary to prevent British subjects being inveigled or carried by force into foreign territories on the Indian Continent. If all persons conducting labourers into those territories are subjected to proper regulations, whereby it may be certain that every labourer so proceeding shall be made aware that he is liable to be taken beyond sea without the protection of the British Government, and whereby the option of turning back shall be freely afforded him, I do not think that any abuse is likely to occur. But conceiving this to be a point on which the Madras committee must have a great deal more information than we have, I shall say no more upon it.

“The sort of law which I would suggest, and which, in my opinion, would be sufficient for regulating the system of emigration from India, may be gathered from what I have said when touching upon the several abuses to be guarded against. In India it would be necessary to limit emigration to certain

ports which might be conveniently named from time to time by the executive Government. The necessity of regulating the system involves the necessity of limiting it to places where means can be provided for the enforcement of the regulations. At each port of embarkation a Protector of Indian Emigrants might be appointed, having no connection with the police and no power to punish. He might probably conduct his duty with a very small establishment. At any rate, the one or two clerks and chuprassées whom he may require should have no interest in the matter. At his office he might examine leisurely one by one, and without the presence of any party interested in the system, every labourer who should come to him professing a desire to embark. After making sure that the labourer fully understands what he undertakes, and that he is acting voluntarily, the Protector might make out a certificate containing a description of the holder's person. A registry of all certificates, containing the date of examination and all particulars, might be kept. The system of passing coolies in batches might be forbidden. It might be the Protector's duty to see that no force, or show of force (such as, marching coolies about in gangs under burkundauzes), should be allowed, and to make it well understood by all that if any labourer, at any moment, chooses to change his mind as to going abroad, no summary interference with him will be permitted. The certificate might, within a limited time from its date, be a sufficient warrant to any master of a vessel who had obtained authority from the Protector for conveying emigrants to receive the holder on board. The Protector might refuse to grant such authority, unless convinced that the master and officers are, by experience, temper, character, &c., suited for such a duty as the conveyance of Indian labourers. Before the ship breaks ground the Protector might proceed on board and grant a final permit to the master to sail with such labourers as then and there produce their certificates, and still testify their desire to proceed; provided he be satisfied that all regulations concerning space, food, water, ventilation, medicine, &c., have been duly attended to. In regard to space and water, the regulations might be more liberal in favor of the emigrant than the old regulations. Security, in the shape of a deposit of stock paper, for the return passage of the labourer, might be insisted upon. A very small amount of security would suffice for labourers going to Mauritius, whence the return passage is cheap. I conceive that a law of the Imperial Legislature would be necessary in order to insure, on the part of masters and

owners of vessels, obedience to such regulations as the Indian Government might frame, and to render breach of the same, on shore or at sea, punishable in any part of the British dominions. To prevent smuggling Indians to foreign parts, contrary to law, all vessels trading in British waters, and British vessels everywhere, might be liable to search by men-of-war expressly with this object, and a proper penalty for every Indian labouring man found on board contrary to law might be imposed. If more than a very small number should be found, the penalty might well be confiscation. Permission might be refused by the Government to ship emigrants to any colony where, in the opinion of that Government, the law applicable to such emigrants is not in all respects such as is suitable for free men of that class, and where adequate practical facilities, considering the circumstances of the emigrants, are not afforded by the colonial forms of procedure and institutions. In regard to law in the colony, no power to retain labourers within the limits of an estate, nor otherwise to interfere with their liberty out of working hours, nor to inflict corporal punishment upon them, nor to inflict any other punishment upon them otherwise than by the hands of public justice, should, in my opinion, be permitted. Breach of contract on either side should annul the bargain in respect to the party breaking it, except that the contracting employer should be obliged to return the labourer, if called upon to do so. The terms of contract should, I think, be shortened according to the distance of the colony. Two years for Mauritius would certainly be ample. Taking the market rate of wages there at Rs. 10, and the contract rate at Rs. 5, rations being the same, that would allow the contracting employer Rs. 120 for his expenses in importing and exporting again the contracting labourer.*

"After the first term I think no renewal should be allowed, but employer and working man should be left to make their own bargains for short terms, say, for not longer than six months: all bargains for short terms, in anticipation of the expiry of existing bargains should, I think, be valid. One day of rest in seven, except upon pressing occasion, might be insisted upon. A class of labourers who should work every day of the week would drive labourers who work only six days out of the market.

* "Because of the disadvantages under which the weaker party to the contract may often labour, from his original ignorance of circumstances known to the other party and the nature of the bargain, I think he should have the power of freeing himself on paying the full charges of the other party, as proposed by Lord Glenelg. If this be not allowed, I think there should be no remedy for breach against the weaker party, but by regular civil action."

"In regard to legal procedure, the appointment of competent interpreters would be indispensable. So also, I think, the institution of cheap and accessible courts, competent to give labourers civil damages for ill-treatment on the voyage and in the colony, should be insisted upon. Perhaps a Colonial Protector of Indian labourers, to give advice and generally to see that these poor people obtain their rights, to be the medium of communication between the labourer and his family, and to remit money to the labourer's home by a system of public bills, also to report on the arrival of each cooly vessel to the Protector at the Indian port whence it sailed, might be useful to the colony. As in India, I think it would be better to confine the police and all other judicial officers to their proper duty of deciding disputes and punishing offences in cases where Indian labourers are concerned as in all other cases. Where Indian labourers sail without contracts for our own colonies, it does not occur to me that any measures are necessary, except such as will insure against being carried off involuntarily by fraud or force. Regulations, such as are above contemplated as to be enforced in India, would seem to me sufficient for this purpose."

I may add that Sir J. P. Grant, who now, with Jamaica experience added to his knowledge of India, is better qualified than any other person to form an opinion, has distinctly said that his subsequent study of the question from all points of view has only strengthened him in the conclusions arrived at by him as a member of the Commission of 1838-40.

The views of the members of the Government of India were nearly as divergent as those of the members of the Calcutta Committee. Mr. Bird would have chosen to maintain the absolute prohibition; Lord Auckland would have permitted emigration to Mauritius, if he could have seen his way to preventing emigration to other colonies at the same time; Messrs. Prinsep and Amos were for allowing a regulated emigration to both British and Foreign colonies. The conflicting minutes were laid before the Court of Directors, who declined to allow any relaxation of the existing law till the question should be considered by Parliament. But the interest of Parliament in the subject had meanwhile begun to abate a natural reaction after the somewhat sensational manner in which the case had been taken up by the abolitionists. The question had degenerated into a party one, and sides had changed in a curious way, till we find the son of Zachary Macaulay in 1840 supporting what Lord Brougham two years before had so strenuously denounced as an "infernal trade." Ultimately there ceased to be any measure relating to Indian

emigration before either house of Parliament, and the question was left to be dealt with executively by the Colonial Office, acting in communication with the Board of Control and the Court of Directors.

The opinion of the more moderate had gradually come round to the view that, under proper control, emigration, at any rate to the Mauritius, might be permitted. Accordingly, by an order in Council at home, and an act of the Legislature in India, emigration to Mauritius was made legal, with effect from the 2nd December 1842. The Act, though perhaps clumsier in form, in substance follows the general scheme of the previously repealed law of 1837. One obvious omission, namely, the omission to provide an independent officer under the style of Protector of Emigrants to perform the duties of supervision and check at each of the ports of embarkation, had to be remedied by an amending Act in 1843. But the two Acts, XV, 1842, and XXI, 1843, taken together, formed the basis of the emigration rules in force till 1864. Some slight modifications of detail were introduced from time to time; but, speaking broadly, the legislative history of emigration for twenty years, as far as British colonies were concerned, was simply an extension to one sugar-producing settlement after another of the Acts of 1842 and 1843. Emigration was thus successively legalised to Jamaica, Trinidad and British Guiana in 1844; to Grenada and St. Lucia in 1855; to St. Vincent, St. Kitts and Natal in 1860; to the Seychelles in 1862; and to the Danish Colony of St. Croix in 1863. Two important points of policy were, however, laid down during this period. In the case of Mauritius and the three colonies of Jamaica, Trinidad and British Guiana, emigration had been permitted without any proper investigation into the means available for the protection of the emigrant when he should have reached his destination. When proposals began to come in for further extending the sphere of emigration, Lord Canning perceived that some guarantee on this point was necessary, and accordingly in Act XXXI, 1855, and all subsequent extending Acts, there was inserted a clause declaring that the Act would only take effect when the Government of India should notify that such regulations had been provided, and such measures taken in the colony, as might be considered necessary for the protection of the emigrant during his residence and in respect of his return to India. Supported by this clause, Lord Canning did in fact force the colony of St. Lucia to modify certain obnoxious provisions in its local ordinances before he would make the necessary declara-

tion. Similarly, an Act of 1856 gave the Government of India power to suspend emigration to any colony when the required conditions were not fulfilled.

This law was called forth by the insufficiency of the quarantine arrangements at Port Louis, which had led to a most lamentable loss of life among Indian emigrants in 1856. In September of that year, accounts were received of excessive mortality among the emigrants who had sailed from Calcutta in two ships, the *Hydere* and the *Futteh Mobarick*, while in quarantine upon Gabriel Island near Port Louis. The *Hydere* arrived on the 5th January 1856 with 272 immigrants, and the *Futteh Mobarick* on the 9th idem, with 380. Though there were then no symptoms of cholera, the immigrants were ordered into quarantine on Gabriel Island, where they were landed between the 14th and 18th. Inadequately sheltered—if, indeed, they had any shelter at all—exposed to a specially inclement hurricane season, placed in charge of a drunken and incapable doctor, and insufficiently supplied with fresh water and medicines, it is no wonder that these poor wretches fell a prey to cholera, fever, and dysentery. The result was that, when the remnant was released from quarantine on the 6th of May, out of 697 souls landed, 284 had perished. The report first furnished by the Government of Mauritius was very meagre, though the naked facts were sufficiently piteous. Further information was, however, obtained from the Hon'ble A. Eden, who had been on leave in Mauritius, and from other sources; and as it appeared that the Government of Mauritius had it in contemplation to continue to use Flat and Gabriel Islands as a lazaretto, though in bad weather they were quite cut off from the main island, the Government of India determined at once to suspend emigration to the colony. This was done by notification dated the 24th October 1856, and the measure, with the reasons for it, at once communicated to the Government of Mauritius and to the Court of Directors. The Mauritius authorities were thoroughly roused by the decisive action of the Government of India, and the whole quarantine system having been put upon a proper footing, the embargo was removed in April 1857.

But while in the legislation on the subject these two important gains had been secured, two changes of colonial policy had been accepted which I cannot help looking upon as retrograde. The first was the extension of the period qualifying for back passage from 5 to 10 years in British Guiana and most of the West Indian Colonies; the other, the total abolition of back

passage in the case of Mauritius. Had the policy sketched by Sir J. P. Grant been adhered to, both of these encroachments would have been resisted.

The history of emigration to French Colonies is a separate one. The climate of Bourbon or Réunion, though highly favorable to Europeans, seems to be inimical to negroes, and the supply of labour has been a chronic difficulty in that colony. We have seen that it began to draw on India for emigrants even before Mauritius, but from 1839 emigration to Réunion was illegal. Nevertheless, the demand for labour was so urgent and matters were so brought to a crisis by the emancipation of the slaves in the French Colonies in 1848, that under cover of a free emigration from French Indian Ports a system of kidnapping and decoying British subjects had sprung up, which Act XXIV, 1852, was intended to repress. Meanwhile, the French Government had, in 1851, applied for permission to recruit labourers for Réunion in British India, and the proposition had been favourably received by Lord Dalhousie's Government. Negotiations were, however, greatly protracted, and it was not till 1860 that a convention was agreed upon between the two countries. In June of that year, the Secretary of State urged the speedy passing of a law to give the convention effect. The urgency of the case arose from the fact that the French had again resorted to a system of obtaining negro labour, designated in the preamble to the convention as a "*recrutement sur la côte d'Afrique de travailleurs noirs par voie de rachat*," but described by Lord Russell as "a revival of the African slave-trade, however the operation may in terms be disguised." This system, otherwise known as the "Regis contract," the Emperor could not put an end to till he was assured by a definite conclusion of the convention that his colony would be able to obtain labour from India. But the convention would be a dead letter without the necessary repeal of the Indian law forbidding emigration to French Colonies. Thus the Act of 1860, permitting emigration to Réunion, Guadaloupe, Martinique and French Guiana, was in some sort passed in the interest of the negro and under abolitionist pressure. The precaution of first ascertaining whether sufficient guarantee existed for the protection of the cooly in French Colonies seems therefore to have been omitted. Yet surely the first obligations of the Indian Government were to its own subjects. *Amicus Quashy, magis amicus Ramsawmy*. However, as an Act, Act XLVI of 1860 was in definiteness and exactitude an improvement on the legislation then in force in regard to British Colonies.

The next important epoch in the history of legislation on this subject was the passing of Act XIII, 1864. The grounds and general character of that enactment cannot be better explained than in the following statement of objects and reasons by Mr. (Sir H.) Maine:—

“The emigration laws in force in India have for some time past been under the consideration of the Government of India. In preparing a measure for the amendment and systematization of those laws, it has been thought desirable to keep the following objects in view:—

(1.) the consolidation (with the necessary improvements) of the various Acts now on the Statute-Book;

(2.) the repression of any abuses which may exist in the recruitment of labourers;

(3.) the protection of the labourers and the regulation of the depôts;

(4.) the definition and description by express law of the duties of the Protector of Emigrants;

(5.) the removal of the discrepancies which exist between the system of emigration to French Colonies and the system under which emigration takes place to dependencies of the British Empire and certain other localities;

(6.) the removal, by well-considered general provisions, of the necessity for separate legislation in particular cases.

“I.—With a view to the consolidation of the law, all previous statutes relating to emigration (with the exception of Act XLVI of 1860 and Act VII of 1862, but including the Crimping Act), are repealed. It is supposed that the provisions of the Penal Code as to abduction or kidnapping, and the somewhat severe penalties in this Bill provided to prevent involuntary emigration, will have the effect of rendering the Crimping Act superfluous.

“II.—The task of framing provisions for the effectual repression of abuses which exist, or which may possibly grow up in the recruitment of labourers, has been very greatly facilitated by the passing of the recent Bengal Act III of 1863. That Act appears to have been so carefully considered, and to be so well calculated to effect its object, that it has been thought desirable to follow it substantially in the part of the present measure now under consideration. The principal difference between the machinery of this Bill and the system which it is intended to supersede, consists in the provision that every recruited labourer shall, instead of being forwarded at once to the coast, be taken before a Magistrate for registration. Pre-

vious to registration, the Magistrate will interrogate the recruit as to his comprehension of the engagement and willingness to fulfil it. The recruit, if the examination should prove satisfactory, is then under proper regulations to be forwarded to the depôt, and there to be at once inspected by the medical officer. The recruiter is to be regularly licensed, and the later sections of the Bill provide by penalties of fine and imprisonment against unlicensed recruiting, against neglecting to take the recruit for examination before a Magistrate, and against forwarding the recruit to the coast without registration. Further, in order to punish and prevent malpractices which are said to be not unknown in some parts of India, any person who may falsely represent himself to have Government authority for recruiting, or who may attempt to induce the police to assist him, is rendered liable to imprisonment or fine.

“III.—For the protection of the emigrant when he has reached the coast, depôts are to be licensed and to be liable to constant inspection. There is to be a medical officer for every place to which emigration is authorized. The Protector is to be present at the first examination of the labourer and at his embarkation. If he is unfit to proceed on his voyage, the Emigration Agent of the colony for which he was intended must send him back to his district. The Bill provides securities (consisting in the Magistrate’s registration, the Emigration Agent’s certificate, the list of the Protector, the list of the Captain of the emigrant vessel, and the list of the Customs Officer) against any other than registered emigrants being embarked. It further provides for the survey and licensing of emigrant ships, and for their being duly provisioned and supplied with medical stores, boats, and other necessities.

“IV.—The Bill for the first time gives a legal description and definition of the duties of a Protector of Emigrants. Although the Protector is relieved from some of his functions by the provisions for local registration in the emigrant’s district, it is assumed that his duties are still sufficiently numerous and important for it to be desirable that the Protector should be an officer with no other avocations. These duties will embrace the general superintendence of the emigrants from the time when they are brought down to the port to the moment of embarkation. It should be repeated, however, that the Protector will no longer conduct the enquiry as to the free will of the emigrant. The responsibility of that investigation is thrown by the Bill on the local Magistrate.

“ V.—French Colonies have now advantages in their Acts on three chief points,—the time during which their ships may sail for the West Indies, the space required for emigrants, and the proportion of women they are compelled to carry. The Bill proposes to assimilate the general law on the first two points to the French Acts, and gives power to the Governor-General in Council to fix the proportion of women. The question whether other Emigration Agents should be paid by fees, as the French Agents may be paid, is resolved in the negative.

“ VI.—The advantage of providing a uniform and general system, which may be known to British Colonial Governments and to foreign powers as containing the sole conditions on which emigration from India can be allowed, has been considered to justify a part of the measure which will prevent recurrence to separate special legislation adapted to particular treaties, and will empower the Governor-General in Council to authorize emigration, but subject always to the proposed Act, to any new colony or locality. The Bill continues the legality of emigration to those places to which it is now lawful.”

A mere enumeration of the Acts, nineteen in number, through which the law on the subject of emigration was then scattered, sufficiently proved the need of consolidation.

The necessity of bringing the process of recruitment under some form of control had long become manifest. In Madras the practice had been introduced, with the consent of the Agents, of requiring recruiters before commencing operations in any district to obtain the countersignature of the Magistrate to their license, and of bringing intending emigrants before a Magistrate previously to their leaving the district in which they were recruited. And rules to this effect were embodied in the Madras Revised Code of 1861. In Bengal the attention of Government had been especially called to this part of the system by Mr. Beyts, Protector of Emigrants at Port Louis, who had been deputed by the Colonial Government to enquire into the practical working of emigration in India. Mr. Beyts' suggestions were in the main approved by the Lieutenant-Governor and the Government of India, and were very closely followed in the subsequent legislation. Pending legislation, however, the Government of Bengal was authorized to adopt Mr. Beyts' rules as slightly modified by the Lieutenant-Governor, so far as they could be enforced without express sanction of law.

Under Mr. Maine's third head, the legislation for the control of depôts is almost entirely new. They are not mentioned in

the laws before passed, nor in the Calcutta rules. They are briefly noticed in the Madras rules of 1861. Doubtless the legislation embodies the practical experience gained. In the important point of a medical inspection, the law had already been anticipated at Calcutta by executive action.

The necessity for a definition of the duties of the Protector had been forcibly illustrated in 1860 by the case of the *Tyburnia*, in which the Secretary of State called for a report on the circumstances attending the embarkation of emigrants. A very unsatisfactory explanation was given by the Calcutta Protector, and it was clear that his supervision was lax in the extreme. It became evident that a separate officer must be appointed Protector, and this was at once done. The duties had, till then, been performed by the Master Attendant with the aid of an Assistant Protector, who also had other duties.

On Sir H. Maine's 5th and 6th points no further remarks are necessary.

The Act of 1864 has been subsequently amended in details, but still, as incorporated in the consolidating Act of 1871, forms the basis of the system of control to which emigration is now subjected. Though not faultless in details, it is in the main, if carefully administered, sufficient to secure all that the Indian authorities can directly secure, *viz.*, that emigrants shall embark of their own free will and with some knowledge of the conditions of their new existence, and that they shall be taken proper care of in the depôt while waiting to embark and during the voyage to their destination.

Having thus all too hurriedly sketched the general course of policy as illustrated by legislation, I will now proceed to summarise the chief facts of emigration as they bear upon the emigrants themselves and the country whence they emigrate.

The records of emigration prior to 1842 are so scanty and uncertain that it will be best to begin with that year, in which, as we have seen, emigration to Mauritius was permitted again to begin after it had been for four years interdicted. The embargo on emigration was only removed in December 1842, hence but a few coolies sailed in that year. In the following year, the demand for labour in Mauritius, repressed by years of prohibition, again asserted itself, and nearly 40,000 emigrants sailed. In 1844, the number fell to 8,242, all to Mauritius. In 1845, the three great colonies of Trinidad, Jamaica and British Guiana enter the labour market, and for the three years, 1845—1847, constitute, with Mauritius, the sole importers

of emigrants. The Mauritius demand stands at about 7,000 souls per annum. In 1848, Jamaica drops out of the list, and in 1849 the other two colonies west of the Cape. Emigration was in fact stopped, partly on account of great mortality among the emigrants, partly owing to a conflict then waging between the colonists and the Colonial Office.

In 1849 and 1850, the Mauritius demand slightly increases. In 1851, British Guiana and Trinidad again begin to import Indian labour, and the average emigration to these two colonies and Mauritius for the five years, 1851—1855, rises to upwards of 18,500 a year. From 1856 onwards, the three great sugar colonies, Mauritius, British Guiana and Trinidad, yearly indent for a greater or less number of emigrants. Jamaica is less regular. In 1856, the lesser West Indian colonies begin to come into the field, but their demand is neither large nor continuous. The four years, 1856—1859, may be taken together. Emigration culminated in 1858, when 45,838 souls left India. The number in the following year (43,057) fell little short of this. The increase was partly due to the prosperity of the Mauritius, but it was shrewdly suspected that many a mutineer enlisted for Mauritius to avoid deportation to Port Blair, or even a voyage to that undiscovered country from which there is no repatriation. The annual average for this period was upwards of 31,000, of whom 27,000 were sent to Mauritius. For the 11 years, 1860—1870, the annual average has been about 18,200, but here has been much fluctuation. For instance, in 1861, the emigrants numbered 31,493; in 1867, the number fell to 7,614. The famine in the North-Western Provinces may have had something to do with the large number in 1861. The variations have been due to the variations in the number of colonies in the field and in the local demand. In 1860, Natal began to draw labour from India, and continued to do so till 1866. In 1861, Réunion came into the field, drawing 5,333 souls from Calcutta. The emigration to Réunion has continued, but in decreasing numbers, and has since 1865 been carried on altogether from the French-Indian ports. In 1862, St. Croix took a ship-load of Bengal labourers, the only emigration thither. In 1864, the French West Indian Colonies entered the market. The Mauritius demands have fluctuated within very wide limits. In 1865, 19,493 souls sailed for that colony. In the following year, the number dropped to 3,549, and in the next year a single ship carried the whole Mauritius emigration. This sudden cessation of demand was greatly due to the epidemic fever of 1866 and 1867. The

figures for 1868—1870 show a steady but slow increase in the demand for Indian labour. The West Indian emigration has been tolerably steady.

The following figures of emigration from 1842—1870 are approximately correct:—

	Men.	Women.	Children.	Total.
To Mauritius	243,853	63,459	44,089	351,401
„ British Guiana	53,393	16,983	9,385	79,761
„ Trinidad	28,030	9,280	5,209	42,519
„ Jamaica	10,022	3,233	1,914	15,169
„ Natal	4,116	1,463	869	6,448
„ Minor British West Indian Colonies and St. Croix (Danish)	4,587	1,595	839	7,021
„ Réunion	10,751	2,939	1,315	15,005
„ French Colonies west of the Cape	10,800	4,118	1,423	16,341
To all destinations ...	365,552	103,070	65,043	533,665

The statements of return emigrants are very untrustworthy. Those which I have been able to obtain give the following figures for the same period:—

From Mauritius	97,418
„ British Guiana	7,621
„ Trinidad	3,981
„ Jamaica	1,848
„ other Colonies	1,310
Total	112,178

Except in the case of Mauritius, where the return is approximately correct, these figures probably understate the number of returns. But we may fairly assume that the balance against India is not less than 400,000 souls in the last 30 years. If we add the drain to Ceylon and the Straits Settlements, it will probably not fall short of half a million. On the other hand, the proportional gain to the colonies has been enormous. Thus, in 1871, Mauritius had 216,000 inhabitants of Indian extraction, or more than two-thirds of the whole population, while the three chief western colonies had between them some 80,000 Indian settlers.

I have not any exact figures to give as to the distribution of the emigrants according to the province of recruitment. It may, however, be said generally that the earliest recruiting-grounds in the Bengal Presidency were Behar and Chota Nagpore, the so-called “hill coolies” being in great request. But the number of aborigines gradually decreased, partly from the competition

of the tea districts, and partly because of the heavy mortality at sea among this class of emigrants. Simultaneously recruiting operations seem to have been pushed further westward into the Benares division and the Lower Doab, as also into Oudh. In Madras and Bombay, no geographical distribution is now possible. As little can be said as to the classes from which the emigration was mainly drawn. As a general rule, the Hindus largely outnumber the Mussulmans. The Calcutta emigration is thus classified by the Protector of Emigrants:—Hindus, 218,973; Mussulmans, 49,860; Aborigines, 54,956; Christians, 88. Of the emigrants from Calcutta, the mass belongs to the lower agricultural and labouring castes; but there is some mixture of all castes. The emigrants from Madras are said to be “mostly Pariahs, with a considerable number of Sudras and a few Mussulmans.” In the Bombay emigration about 7·5 per cent. seems to have been Mussulman. The records of coolies’ savings are very imperfect; but there is no doubt that especially from Demerara and Trinidad the return emigrants do carry away very considerable sums. The steamer *Enmore*, which left Georgetown last September, carried 581 Indian passengers with economies amounting to £21,500 or £37 a head all round, including women and children.

The statistics of mortality at sea are also meagre and fragmentary. Speaking generally, the emigration to Mauritius from Madras has been healthy, the deaths seldom reaching one per cent. From Bombay the mortality was equally light till the years 1864 and 1865, when it was lamentably swelled by an epidemic of fever. Since the latter year there has been no emigration from Bombay. The average death-rate of the voyage from Calcutta to Mauritius for the 11 years, 1860—1870, has been 2·4, a high rate for so short a voyage. Similarly, on the voyage to the West Indies, the mortality among Madras coolies has seldom exceeded 2 per cent. Among Calcutta coolies, on the other hand, it seldom falls so low; and at times the death-rate has been so terrible as to lead one to doubt whether an emigration liable to such disasters should be allowed to continue. Thus, in 1856, the mortality rose to 17 per cent., and again, in 1864, the deaths were 18 per cent. of those embarked. In both cases careful enquiries were instituted, but without any very decided results. It was suggested that the large number of “hill coolies” shipped from Calcutta had something to do with the greater mortality on the voyage thence, as compared with the voyage from Madras; and it is undoubtedly the fact that this class bears even river-

transit very badly. But this theory would hardly account for the excessive mortality of 1864, when the competition of the tea districts had largely diminished the number of Kôls, and the congeners of that tribe enlisted for service in the colonies. Altogether the question is still distressingly obscure.

To complete the review of facts needful for an intelligent appreciation of the results of the emigration system, it is necessary to get some conception of the condition of the cooly in the various colonies importing Indian labour. To attempt an analysis of this sort for each colony in any detail would swell this paper to an undue length; but in a general way I think the following summary, under the several heads of health, wages and savings, laws and regulations, and moral and material condition, will be found correct. In point of salubrity, there is little to object to Mauritius, where, except during the years 1866-67, when a fever of a most virulent type raged among all classes, the death-rate is not high. In 1870, it was 22 per mille, a rate which will stand comparison with that of healthy districts in temperate countries. In British Guiana and the West Indies, the cooly has to undergo a period of acclimatisation, and in the first year of service the mortality stands unduly high. When acclimatised, the Indian population shows a death-rate not now abnormally high; but there is still room for improvement. The Colonial Governments seem to be taking up the question in earnest, and a system of rationing emigrants for the first portion of their residence has been tried with good results. The shipment of emigrants so as to arrive before the rainy and unhealthy season is also insisted upon, and the organisation of a medical service for duty in cooly hospitals has been, or is being, carried out.

Year.	Percentage of mortality.
1865	... 5.4
1866	... 4.39
1867	... 4.13
1868	... 2.9
1869	... 2.84
1870	... 3.06

The figures in the margin show that an improvement has been effected in British Guiana. In Jamaica the death-rate is still heavy, chiefly owing to excessive mortality in one district, to which the Governor has now declined to allot fresh emigrants. Trinidad shows a death-rate seldom falling short of 4.3 per cent. The smaller islands seem on the whole a healthy residence for Indians, though at one time the death-rate on Grenada and St. Croix was high, chiefly, it seemed, owing to neglect on the part of the planters to supply proper dwellings and medical attendance. This in all colonies the employer is bound by law to do; but the enforcement of the obligation has often been lax, notably so in Mauritius. However, attention seems now to be thoroughly roused to this

important subject, and the planters perhaps begin to feel that it is for their own interest to look after the material welfare and comfort of their labourers.

Wages in Mauritius have been singularly steady; if anything, they may have slightly fallen in the last 20 years. The average wage of an adult male employed on a sugar estate is Rs. 5 per mensem, in addition to a sufficient daily ration of rice, dāl and salt fish. Old emigrants may earn one or two rupees a month more at agricultural labour. For skilled artisans the market seems favourable. As to the savings brought back by Mauritius emigrants, we have no precise record; but many of them do bring back considerable sums. On the other hand, there is a large time-expired population, some portion of which would probably escape from the very galling restrictions imposed on this class, if only they could save enough to purchase a return passage to India. In the West Indian Colonies the rate of wages was till lately generally regulated by reference to the wages earnable by a creole or negro labourer performing the same work. The system thus became one of task-work. Many labourers undoubtedly earned good wages; the savings accumulated, though by no means in all cases the savings of agricultural labour, showed this. On the other hand, the enquiries of the Royal Commission in British Guiana proved that there at least the average earnings of an adult labourer were not 5 shillings a week. In the smaller islands, where the planters are poor, wages were lower still. Now, however, most of the colonies west of the Cape have fixed a minimum wage of 24 cents or 1 shilling for a fair day's work.

The colonial labour laws form the weakest point in the case for the Indian emigration. Nor is this to be wondered at. In all the colonies importing labour, the sugarcane is at once the *raison d'être* of the settlement and the means of existence of the vast majority of the non-Indian population. Even when the planting interest has not a very potent voice in the legislature, it has the entire moulding of such public opinion as exists, and is certain, unless the head of the Government is at once very clear-sighted and very strong, to impart a bias to the law and its administration, either directly or indirectly. That such has in fact been the case in all colonies, no impartial reader of the colonial statutes can doubt. In the case of British Guiana, the Commission of 1871 thoroughly exposed the defects of the system and showed that while under indenture the cooly had practically no summary redress for breach of contract by his employer, and that while cases against labourers were counted by thousands in

the year, those against planters could be reckoned on the fingers. This unequal facility of redress, the constituting planters judges in their own cause, the reduction of the cooly by a rigorous system of punishment for so-called desertion to the position of an *adscriptus glebæ* or prædial serf, the bringing into play of undue pressure in order to induce the time-expired immigrant to enter into a fresh indenture;—these blots will be found, in greater or less degree, according to circumstances, in the legislation of most of the colonies. Thus, while the unfairness of the law to emigrants under indenture is probably most flagrant in British Guiana, the repressive measures applied to those who decline to re-indenture are most stringent in Mauritius. It is but fair to add that the whole question of the labour law for emigrants has been of late under discussion, and that a scheme of legislation has been proposed by Lord Kimberley, which, if adopted by the various colonies concerned, will completely remedy the great defects now existing. I should also add that within the last two years the law for Jamaica has been so modified that the above strictures do not apply to it. But previous to that alteration we have the admission of the present Governor that things were very far from being in a satisfactory state.

Under the head of moral and material condition we have not very much information. The disproportion of the sexes—the number of women never exceeding one-half that of men—is a serious drawback and is found a fertile source of crime. But it has not been possible to recruit a larger proportion of females than forty to every hundred males without running the risk of enlisting an undesirable class of women. As more Indians come to settle in the colonies, this inequality will tend to right itself, but the process will be slow. Connections between Indians and women of negro origin seem extremely rare. The restraints of caste and even of religion appear to be easily shaken off. The Commissioners record that they found few traces in British Guiana of any outward observance of the Hindu religion,* and those only in the most out-of-the-way and secluded settlements, and they write of seeing a Mahomedan distributing pork rations to his co-religionists “with much unction.” Liaisons between Mahomedan men and Hindu women, and the reverse, seem not uncommon; and in British Guiana, at any rate, the two religions seem to have amalgamated the Huli and the Muharram into a

* I observe, however, that Canon Kingsley speaks of Hindu temples as not of rare occurrence in *Trinidad*.

single festival. I regret to observe from recent reports that the vice of drunkenness is said to be gaining ground among Indian emigrants in British Guiana. With a relaxation of the restraints of caste and the temptation of cheap liquor, I fear that a deterioration of morale in this respect is not uncommon. That an industrious emigrant abroad enjoys much physical comfort cannot be denied. The improvement of physique apparent among return emigrants, whether from the Mauritius or the Western Colonies, has been frequently remarked, and the character seems also to gain in independence. Children reflect the improved physical condition of their parents, and the British Guiana Commission uses the word "jolly" as best describing their appearance in that colony. Nor must the undoubted fact be overlooked that in the West Indian Colonies and British Guiana many emigrants have voluntarily commuted their return passage for a bounty in money or for grants of land.

What then is the conclusion we should arrive at upon the whole question? Without going back to abstract principles of free trade in labour or individual freedom of action, I think we may say that the *onus probandi* lies upon those who would interdict emigration altogether, to show that the evils either to the country at large or to the emigrants themselves are not only so great as to overbalance the good, but also so inherent in the very system as to be practically remedyless. The facts will hardly support these propositions. Though emigration cannot be regarded as a wholesome check upon our population, seeing that the supply is not derived from the most densely-populated regions, but rather from districts where wages are from various causes low, and where certain classes have become familiarised with the idea of leaving home in search of service of one sort or another; yet it cannot, on the other hand, be looked upon as an injurious drain upon the labour supply of the country. The smallness of its dimensions, as compared with the tract whence the supply is drawn, precludes this view. An emigration of half a million in thirty years, scattered over an area containing certainly not less than a population of fifty millions, must be regarded as infinitesimal.* As to the effect upon the individual

* I take Behar, Chota Nagpore, Oudh and the Benares and Allahabad divisions of the North-West Provinces, and find the total population about 48 millions. On the other hand, the total emigration from this region will fall a good deal under 400,000. Compare this with the emigration from the United Kingdom, which, in the years 1815-1871, numbered 7½ millions, and, for the years 1843-1870, amounted to 5½ millions on a population of (in 1861) 29 millions, or just ten times the Indian exodus. The Irish statistics, taken by themselves, are still more startling. The census of 1861 gave Ireland a population of 5,798,967. During the ten years following, 818,582 Irish people emigrated, or one-seventh of the initial population.

emigrants, it must be confessed that even now, and still more so in the past, he is in certain respects at a disadvantage. He is liable to be imposed upon by recruiters, he incurs a certain increased risk to life upon the voyage, and may be subjected to the action of laws more or less harsh and partial. But none of these evils are beyond remedy, and in point of fact action is already being taken to remedy most of them. On the other hand, an industrious labourer who keeps his health has a career of competence, or even of what to him must be wealth, open to him, and, if he chooses, can settle in a climate not on the whole inimical. The Emigration Board, which is the chief adviser of the Colonial Office, possesses great knowledge of the position of the Indian emigrant, and invariably shows a most impartial desire to do him justice. The main thing wanting is that the information available in India as to the state of the colonies should be full, accurate and brought up to recent date. Thus it will be possible at once to ensure a correct picture of their future being laid before the emigrants previously to emigration, and to remonstrate against any such change in colonial policy as may appear inimical to the Indian labourer. That, however, a very careful watch needs to be kept upon the colonial administrations, the course of the British Guiana and Mauritius enquiries and the recent tragedy in the former colony, abundantly shew; nor is it any imputation on the *bona fides* of those Governments to say this. The element in which they exist is such as to render a thoroughly impartial view upon the spot almost impossible.

It may be necessary to enforce a more stringent system of regulation, and perhaps to insist on the appointment of officers on the part of the Government of India to watch over the interests of Indian emigrants in the colonies. The Colonial office is quite as anxious as the authorities in India that everything which is needed to secure the due protection of the cooly shall be done. The question is whether it is not possible so to watch and regulate the whole system of emigration and labour as to ensure the emigrant a freedom of enlightened choice at the outset, due care and protection upon the voyage and for the term of his contract, and the means of return when his contract shall have expired.

If these conditions are fulfilled, and we then find that the industrious emigrant has a hopeful career before him, and that a fact an appreciable proportion of those who emigrate voluntarily settle in the colonies, the question will have received a practical answer. Meantime I would deprecate in the interest

of the emigrant any hasty attempt to prejudge the matter on any *à priori* assumption that the traffic must be a slave-trade or an "exploitation." Honourable as are the feelings which dictate the extreme humanitarian view, the tone of exaggeration and want of calmness thus imported into the discussion have generally resulted in a re-action which left the cooly worse off than he would have been, had his cause been more temperately espoused. Thus the agitation of 1838 ultimately led to the legislation of 1844, which opened the West Indian colonies to emigration without any sufficient guarantee for the protection of our labourers abroad, while a blind enthusiasm for the negro led to the Government of India being given over bound hand and foot to the planters of Réunion by the Convention of 1860. The question is one of practical compromise, and cannot be solved by reference to abstract principles without a careful study of the real facts.

4.—*Agriculture.*

BY PEARY MOHUN MOOKERJEE.

A RUDE state of agriculture is an anomaly in a country whose wealth consists almost entirely of the produce of its soil. To those accustomed to sights of steam ploughs and vigorous agricultural labor, the wealth of Bengal might not unreasonably appear incompatible with a system of agriculture in which a bare scratching of the soil serves as an apology for the deep furrows of the plough, and in which comparatively little labor and less money are devoted to the whole process of cultivation. But a very slight knowledge of the soil of Bengal, of its fertility and geological characteristics, is enough to show that deep-ploughing and rich-manuring are not only not necessary, but on the contrary injurious to cultivation in this country, and that here the earth might be made to yield abundant harvest much more easily than in less favored countries. The natural advantages which Bengal possesses in this respect are indeed great, and they require but feeble help from the hand of man to turn them into account. Such help, however, is not always forthcoming. It is true that long observation and experience have put our husbandmen in possession of certain rudimentary principles of cultivation, but it will appear, on a close examination of the subject, that the condition of agriculture in this country is far from what it should be, and that the causes which have tended to retard its progress are not of a trivial nature.

The supply of sufficient moisture for cultivation is a question of primary importance to the Bengal ryot, but it is well known that the means of irrigation and drainage which are within his reach are extremely defective. Lands which are situated on the banks of perennial streams enjoy advantages in this respect which leave nothing to be desired, but unfortunately the quantity of such lands in this country is comparatively very small, and is annually decreasing in consequence of the gradual silting-up of the minor rivers and *khâls* which traverse the country. In several of these rivers the silting-up process has been much

accelerated by the short-sighted contrivance adopted by landholders and their tenants for securing water for irrigation, which consist in throwing up cross-dams every year during the rains; so that at present the beds of many rivers in every district remain dry, except for two or three months during the rains, while new swamps and marshes of all dimensions have come into existence in localities which were formerly well cultivated. Even the tanks which had been cut in almost every village and field in times gone by for the sake of profit, charity, or religion, and which supplied not only good drinking water to the villagers, but also water for irrigating the lands in their neighbourhood, have been, in course of time wholly or as good as wholly filled up and become shallow pools of stagnant water. Religion has, however, lost the hold it once had on the minds of the people; the legislature in its laudable attempt to benefit the ryots has placed them in hostile relations to their landlords, and contact with western civilisation leads people to devote to the purchase of personal comforts much of the money which in former times would have been spent in works of public utility. With the exception therefore of tracts of country which are comparatively very small, the crops in Bengal are entirely dependent on the fall of rain; but as the quantity of rain-fall cannot be regulated to meet the exact requirements of cultivation, loss by drought in some years, and by inundation in others, and want of sufficient water in some places, and its superfluity in others, follow as an inevitable consequence.

It is not, however, with regard to irrigation alone that our system of agriculture is defective. The different means and appliances which are availed of by the scientific agriculturist for restoring fertility and vigor to a soil which has been impoverished by cultivation are but imperfectly understood and acted upon by the Bengal peasantry. It is true that a few crops are cultivated by rotation, and that manures are used in the cultivation of sugarcane, potatoes, and other valuable crops, but the ryots are wholly ignorant of the principles which should regulate the rotation of crops and the administration of specific manures to particular soils and crops. Nothing proves more clearly their ignorance in this branch of the art than the fact that they recklessly allow substances which are used in other countries as valuable manures to accumulate and rot around their houses to the detriment of their health. This explains the gradual degeneracy of a crop which has been grown on the same land for several years without calling in the aid of manures or rota-

tion of crops. An attempt to wring out annually from the soil a certain combination and proportion of elementary bodies in the shape of a particular crop must be necessarily as ineffectual as every other contrivance to cheat nature of her dues, and it is therefore no wonder that crops should fail or yield but scanty produce in the absence of any assignable cause.

It would be vain to look for any desire for the introduction of new crops from those who care so little for the improvement of existing crops. The repugnance to change which characterises the lower classes of the community is a serious obstacle in the way of all improvement, and it is only in cases in which a foreigner or an intelligent landholder shows, by the results of a few years' cultivation, the evident advantages of the introduction of a new crop that its cultivation is gradually taken up by a number of ryots. Prejudice and superstition work as much mischief in this as in every other direction. Although sugarcane and potatoes have been for a long time cultivated in the districts of Hooghly and Burdwan, and have proved to be the salvation of hundreds of indigent families, and a source of fortune to many more, there are still many families in those districts who would not cultivate any one of these crops in consequence of a superstitious fear that some mishap would certainly befall them if they should deviate from the precise course of work which was followed by their ancestors. Every family has its proscribed crop, and it might be said of one and every crop that it is not cultivated, and will not be cultivated in any emergency by hundreds of families in each district.

The utter helplessness of the Bengal peasantry, in cases of blight, is another serious defect in our system of agriculture. Blights are generally looked upon as inflictions from heaven, and a ryot would no more think of checking their course than he would attempt to check the legitimate operation of a physical law. The result of such a course is evident. Crops that have been raised at considerable labor and expense are allowed to be destroyed without a single struggle being made for their preservation, while instances have been known in which a valuable crop, such as the Otaheyte sugarcane in the district of Hooghly, has been suffered to become extinct in consequence of the occurrence of blights in two or three consecutive years.

As a subject directly connected with agriculture, the condition of plough-cattle cannot engage too much of our attention. The rapid degeneracy of cattle has excited alarm in every district of Bengal, and the apprehension which it has created as

to the domestic discomforts and agricultural difficulties which may arise at no distant day in consequence of such degeneration appear to be far from unreasonable. It may appear strange that, in a country where the people entertain a superstitious regard for cattle, and treat them with great care and humanity, the condition of cattle should be at all miserable, but the mystery is cleared up when one looks at the ryot's ignorance of the ordinary rules of health and sanitation, and of the necessity of giving a sufficient quantity of grass and fodder to each cattle, of segregating diseased cattle from the healthy, and of stopping of all cattle traffic with affected districts. The periodical outbreak of cow-pox and other epizootic diseases among cattle has failed to give the people a warning of the dangers which ensue from the accumulation of dung and filth in and about the sheds where the cattle are housed, although in the epidemic-stricken villages some extenuation for this neglect is no doubt found in the consideration that cattle can hardly claim any attention where the men themselves perish, uncared for by the hundred. But murrains have scarcely done half the mischief which the slaughter of cattle is daily and hourly doing, and the continually increasing demand for butcher's meat in the market might well create apprehensions of an inadequate supply ere long. It is not, however, simply the reduction of the number of cattle by murrains and slaughter, but also their degeneracy which is to be deplored. Owing to various causes, not the least prominent of which is the rise in the value of agricultural produce, and the consequent increase in the rates of rent, almost all the lands, which were formerly used as pasture, have been, in many places, in the course of several years past, gradually brought under cultivation, and the enactment of a law, so far back as 1857, for the establishment of pounds, showed how this unwise and suicidal conduct of the husbandmen had forced the cattle to the necessity of trespassing on cultivated land. The lands that have been thrown out of cultivation, on account of the paucity of labor in the epidemic-stricken districts, do indeed serve the purposes of pasturage, but even there the accidental remedy has stepped in when the evil has been well nigh consummated. The evil effects of these enervating influences might have been in some measure counteracted, if the breeding of cattle had at all received the attention it deserves. Unhappily, however, not only are no steps taken to procure an intermixture of breeds, but even the long established usages for securing good breeds of cattle have been recklessly abandoned. A false hankering after

utility in this utilitarian age has yoked to the cart the Brahmini bull which, under the sanction of religion, ranges at large, and fattening itself with impunity on whatever food it can help itself to is peculiarly fitted to keep up good breeds of cattle. Stallion bulls have now in most places become a thing of the past, and it is no wonder that cattle should degenerate in these days, when animals worked to the very verge of death in carts and under burdens are their only substitute.

Another circumstance which has temporarily co-operated with the causes described above to keep down agriculture in this country, is the annual outbreak of epidemic fever in Hooghly, Burdwan, and a few other districts, and the diminished supply of agricultural labor caused by its ravages. It is barely possible to give an idea of the misery and destitution to which the people of the fever-stricken villages have been reduced, by the deaths of hundreds of persons, who were in many cases the working members of their families, by the expenditure of all they had to save the lives of those whom they held nearest and dearest to their hearts, and by that physical prostration which not even the sturdiest among them has been able to escape. One needs only look to the usurious rates to which interest on loans of money has risen in the mofussil, to the scepticism as regards the value of remedial agents which has gained possession of the popular mind and to the rare, perhaps hitherto unknown, spectacle of crops rotting in the fields or being destroyed by animals for the very want of the labor and means necessary to reap and store them, in order to form an idea of the wretchedness to which the people have been reduced by the accumulated effects of repeated epidemics. The want of agricultural labor in those districts has been so great that, in addition to the large tracts of land which have become fallow by the utter extinction of families and by amicable arrangements made by ryots with their landlords, more than 2,000 applications for the relinquishment of hereditary holdings have been made to the Collector of Hooghly, within the present month, by ryots residing within a single sub-division of the district. In this emergency, the emigration of laborers from districts which give employment only to a limited number of persons, and in which therefore the wages of labor are low, would have a very salutary effect both on the condition of the laborers, and on the agricultural prospects of the epidemic-stricken districts. But it would be vain to look for any such economic arrangement in a country where people prefer starvation at home to plenty abroad.

The most formidable obstacle in the way of agricultural improvement remains yet to be noticed. In a country where every body, however poor he may be, aspires to the possession of land either as an owner or as a tenant, the condition of agriculture must be inevitably wretched. Every one who is just above the condition of a day-laborer, and who is able by accumulating his daily savings, or by means of a loan to secure an amount which is simply sufficient to buy a pair of bullocks and a plough, hastens to rent land either direct from the landholder, or to take a sub-lease from his tenants. "Better to have ease than happiness" is a well-known saying among all classes of the native community, and it gives a clue to the general craving for land, the possession of which is supposed to secure to its fortunate holder a certainty of maintaining his family albeit in a homely way, and to protect him from those uncertainties and accidents which are associated with more paying occupations. The effect of such a feeling is conspicuous in the condition of the Bengal peasantry. There are scores of ryots in every village, not one of whom holds more than an acre of land, whilst there are dozens who hold even less, and as a general rule the holdings of the majority of the ryots range from three to six acres only. None of these small holdings consists of a compact piece of land, but generally comprises a number of plots situated in different fields at distances of several hundred yards from one another. Such a state of things renders any economical and comprehensive scheme for irrigation and drainage necessarily impossible, while the loss of time, labor, and money which it causes in the cultivation and supervision of crops may well be imagined. Numerous are the disputes which crop up annually among the ryots regarding the ingress and egress of water to and from the mud enclosures which mark the different plots of their respective holdings, and it is only because most of them are settled by the gomastah and the *mundle* of the village that their evil effects have not yet fully developed. The mischief has increased by the frequent divisions and subdivisions of holdings by the operation of the law of inheritance. Testamentary dispositions of property are wholly unknown among the ryots, and poor though their possessions be, it would be a great gain to the cause of agriculture, and to the condition of the ryots themselves if every ryot on his death-bed makes some provident arrangement for the future enjoyment of his property, bequeathing, for instance, all his lands to one of his sons, and his personalty to the rest, or one or more entire plots

of land to each son. As things obtain, however at present, we find that not only does a ryot's holding consist of several small plots of land separated from each other by long distances, but that, in several cases, two or more co-sharers have a joint-tenancy in each and every one of the plots which belonged to some common ancestor. The evils of joint possession increase ten-fold if it extends to the owners of the land, and we find that the same causes which bring about joint-tenancy are also busy in creating and keeping up a similar state of things in the matter of proprietorship. As a matter of fact, not less than half the number of estates in each district are owned by joint proprietors, and although the evils incident to joint ownership do not develope and manifest themselves in those cases where the management of the property is entrusted to the eldest member, or *kurta*, of the family, the practice of placing implicit reliance in the heads of families with regard to the management of properties is daily losing ground, and the evils of divided management are therefore undergoing a corresponding increase. Whether it be the collection of rents, the determination of petty disputes concerning drainage and the rights of user affecting pathways and irrigation tanks, the cultivation of fallow lands, the registration of transfers of holdings, or the adjustment and enhancement of rent, the interference in any one or more of these matters of a number of zemindary agents, each acting under a different master, is productive of the utmost confusion, and is detrimental alike to the ryot and the landholder.

The difficulties, therefore, which stand in the way of agricultural reform in Bengal, are so great and so intimately mixed up with the habits, the institutions, and the character of the people, that one may well despair of devising any scheme which would have any chance of success. In districts in which the epidemic fever has done its fell work, and in those in which small holdings and minute divisions of tenures obtain to a large extent, these difficulties are at present practically insurmountable. Recent enquiries have shown that compact pieces of land of good dimensions could not be had by Government in any district, or even in any division, for the purposes of experimental model farms, unless such lands were taken by the operation of law, and it is easy to conceive how very worthless would be the lessons intended to be taught by model farms to those whose holdings rarely exceed ten acres in extent, and are composed in almost all cases of perhaps a dozen distinct plots of land scattered at different distances from one another. It would, moreover, be too much

to expect that a class of men so ignorant, improvident, and superstitious as are the ryots of Bengal can have the will and the means to profit by the results produced with the aid of ample resources under the guidance of scientific men. Model farms are unquestionably very useful institutions in their way, but there must be a body of intelligent and well-to-do persons in the country capable of taking a practical interest in the cause of agriculture before the usefulness of such institutions can be fully appreciated. The first move, therefore, towards agricultural reform should be to create such an interest in the minds of the rich and educated portion of the native community, and it is a matter no less of honor to the Government than it is of congratulation to the country that measures have already been taken for imparting, ere long, to the advanced native students in our colleges, instruction in the principles and practice of agriculture, and in the cognate arts and sciences. Such technical instruction, aided by observation and experiment in model farms, will certainly remove that apathy against agriculture, the result of ignorance, which exists at present in the minds of all who are above the condition of ryots, and we may confidently look forward to the gradual creation of a class of young men of the rich and middle classes of native society, who by their position, resources, and practical knowledge of agriculture, will be able to remove all obstacles which lie in the way of agricultural improvement. Enlightened self-interest will not be slow in showing the benefits which arise from concessions and sacrifices made for the purpose of assisting one's neighbour to square or drain his land, and means will not be wanting for buying up small holdings and converting them into moderate-sized farms. The prospect is indeed cheering in more than one economical point of view. The poorer classes of ryots will doubtless be deprived of the luxury of calling one or two acres of land their own, but freed from the contingencies of blights, droughts, and inundations, from the heartless exactions of mohajuns, and from the trammels of despotic institutions which render the enjoyment of property a mockery, they will find their social condition much improved by their conversion into paid servants and laborers. Educated young men will find that, although the supply exceeds the demand for labor in the independent professions, and although there is no room even for clerkly employments, they have, in the inexhaustible natural resources of the country, a means for leading them to opulence and renown. A few successful careers, as native farmers, and people will see the wisdom of Bacon's

saying—"It was servants, shepherds, apprentices that were wanted, there were already too many scholars." If that could be said of England more than two hundred years ago, when her noblemen were content with making cross-marks in the place of signatures, and when training in arms formed the principal item in the education of Englishmen, how much more truly does it apply to this country where the greatest number of unemployed persons belong to the educated classes. One cannot therefore be too forward in the wish that technical instruction in different arts and occupations should in some measure supersede literary education, and that agriculture being the question of questions, should engage in a pre-eminent degree the attention of the public.

5.—*The Church Mission Compound, Amherst Street.*

BY THE REV. J. VAUGHAN.

YIELDING to the importunity of my old and esteemed friend Mr. Long, I have consented to give some account of the material improvements which have been carried out of late within this Mission compound. I feel a difficulty and delicacy in doing this for two reasons: first, because I shall necessarily have to tell of myself and my own doings; and, secondly, because, as this is a Mission station, and all our operations have more or less a close relation to Mission aims and objects, it is not very easy entirely to eliminate that aspect of the question, and present what alone comes properly within the cognizance of the Social Science Association—the social and material improvements which have been effected. I will, however, do my best to tell the story in a becoming way.

It will be necessary to glance at the past history of the compound. About fifty years ago it became the property of the Church Missionary Society. It was formerly used as a Tannery. In those days the neighbourhood was, for the most part, covered with jungle, and tradition says that leopards and tigers were occasional visitors in the district. The compound is 788 feet long by 262 feet in width. It contains in its southern portion a tank, 75 feet square. Around this tank, gradually, a little Christian village sprung up. The converts were almost entirely of the poor classes; additions to these were from time to time made by the arrival of Christians from country stations. The population went on increasing, until it reached about 200 individuals. That has been its normal standard up to the present time. A church was built fronting the street and midway of the compound. To the north were erected school-houses and three houses for European Missionaries. All these are still standing.

The native Christian village consisted entirely of thatched, mud, or bamboo huts. These were originally built, and for many

years kept in repair, by the Church Missionary Society. The people lived in them rent-free, and, on the principle that people value lightly that which costs them nothing, they occasionally used the materials for cooking their food. The kindness of the motive which prompted the Society to provide free houses for the converts cannot be questioned, but the *wisdom of the policy* is open to very grave suspicion. Missionaries now-a-days are pretty well agreed that it is a mistake to do for the people that which they can very well do for themselves, and which, when they were not Christians, they never dreamt of asking others to do for them. However, if we can venture to regard ourselves as wiser than the ancients in this respect, we must bear in mind that we have their experience to guide us, whilst they had experience to seek for.

That venerable Missionary, the Rev. T. Sandys, who lately passed to his rest after forty-one years of Missionary toil, made the first innovation on the old state of things. Mr. Sandys first taught the people to provide houses at their own cost. He, moreover, initiated the wholesome rule of requiring each owner of a hut to pay a small rent for the ground on which his holding stood. The enforcement of the rule, however, was found to be so difficult, so utterly repugnant to the feelings of the people, that it practically became a dead letter. Nevertheless, the existence of the law in question—and it was never formally repealed—did undoubtedly confer upon the people certain legal rights which, in the case of litigious persons, might have occasioned the Church Missionary Society considerable trouble. When it is considered that many of the native Christians lived for a quarter of a century on the above understanding in huts of their own erection, it will be seen that they had acquired a claim to the land upon which their houses stood, which, if asserted, would have been very difficult indeed for the Society to rebut.

The native Christians had, no more than their brethren outside, any idea of order or symmetry in the erection of a village; consequently huts sprung up higgledy-piggledy, facing all points of the compass, according to the caprice of each individual builder; crooked, intricate little lanes in which foot-passengers jostled one against another, were the only paths to be seen. Of course, no attempt at metalling those paths was ever made; accordingly in the rainy season they were all but impassable to those civilised beings to whom shoes and stockings have become a necessity. Nothing in the shape of a drain or water-course was anywhere to be seen. The people from time to time re-plastered their huts;

in order to obtain earth, they dug no end of holes in different parts of the compound. Some of these they filled up with all kinds of rubbish; during the rains the vegetable and animal matter in those pits naturally rotted, and as naturally vitiated the air with a pernicious effluvia; the other holes contained putrid water, and were not much less noxious than the rest. Each little hut had a small enclosure called the উঠান; this was in the front of the hut; the fence was of matting, and was high enough to obstruct the vision of outsiders, but was at the same time a serious obstruction to the free circulation of air; but this, *i. e.*, the circulation of air, was the last thing to be desiderated according to native ideas; it was rather an evil to be guarded against. The cottages were so constructed as to admit the smallest practicable quantities of light and air. Besides the outside barrier of the fence, there was the low sloping roof of the cottage, teaching a lesson of humility to all who wished to enter; a narrow verandah ran around the walls of the house, also covered by the roof; inside the cottage were one or two rooms, with a little opening of from one to two feet in diameter in the wall on one side near the roof. This little aperture with the open door was the only facility for light and ventilation. At night very generally the door was shut, and probably five or six persons slept in one of those little cabins. Then, again, such is the nature of the soil in Calcutta, or at any rate in our compound, that the mud floors in every case bore the appearance of black, damp clay; upon these many of the people slept with nothing under them but a thin reed or rush mat. Of course, both the walls and floors always bore traces of expectoration and other abominations. The exhalation from those floors must have been the reverse of beneficial. Although no general system of drainage was known in the village, each cottage had its own private system; this was simple enough—a kind of pit was dug in the উঠান (little court-yard); into this the privy and cook-house were drained. Throughout the dry season each of these pestiferous pits poured forth its poisonous contribution into the surrounding atmosphere. In the rains these necessarily overflowed, and the streams of the different cess-pools commingling meandered about the village: there being a natural fall into the tank, it received a considerable portion of the *gross* result.

Now, this same tank was also the common bathing-place. Therein about 200 persons daily performed their ablutions; dirty clothes, cooking utensils, and hookahs were also washed in

the tank; beds full of vermin were from time to time immersed in it. The sight of the water was enough for a delicate stomach; but Bengalis have not delicate stomachs: such was the water drunk all the year round by the denizens of the Mission compound.

Looking at the state of things in those days, it will not be thought surprising that disease and death had a bountiful harvest. Skin-diseases, bowel-complaints, and various other ailments were most rife amongst the people: men and women with emaciated frames, and poor little children with pot-bellies and sunken eyes were sadly common objects. In looking over the Burial Register of those years, I find the death-rate was from 10 to 12 per cent.

I now come to the change which has happily been effected. In common with most Missionaries of late years, I have ever felt the great importance of breaking up the system of dependence under which the native Christians were formerly trained. It was very pleasant no doubt for the poor people to call the Missionary their "ma-bap," and to be relieved of the burden of feeding, clothing, and educating their children,—it was very comfortable to have the *Society* to fall back upon in all their emergencies, and to be sure of either work if they wanted it, or support in idleness if they did not—but such a mode of treatment was more likely to perpetuate a race of ill-conditioned and ungrateful paupers than to train up a strong, intelligent, and effective body of Christians who should commend their religion to their non-Christian countrymen. It was clear that the old system was fatal to *self-respect* and *self-help*. The question which forced itself on my mind, as it has done on the minds of many others, was—"What would become of the native church if we, the Missionaries, were withdrawn?" There seemed, alas! too much reason to fear that, as the whole thing rested solely and entirely on us, our removal would be followed by a total collapse, and that every trace of Christianity would speedily be effaced from the land.

A reform, or rather *revolution*, was manifestly called for. First of all, it was necessary to cut off superfluous and needless aids of every kind. This I undertook to do, fully convinced that all such help, however well meant, has a demoralising and weakening tendency. But it was no easy matter to effect this inroad upon what the people had come to regard as their *rights*. Nor did I much wonder that they denounced me as a monster of cruelty, and a wolf in sheep's clothing. I persevered in hope.

That hope was more than realised. By constant appeals to their good sense and judgment, and by (I trust) a kind consideration for their *real* wants and grievances, I had the satisfaction of seeing the poor people gradually come over to my views. They began to see that, after all, I was their friend, and not a few of them would blush to think of the beggarly state of dependence in which they had once lived.

The next step was more *positive*. It now seemed the right time to impress upon them a weighty lesson of the best of Teachers, "It is more blessed to *give* than to receive." It was something to give up *receiving*; it was much more to reverse the order and become themselves the *givers*. Slowly and surely this lesson was learnt. The great object put before the people was the raising of an *endowment for the support of a native pastor*. The advantage of having an independent and self-supporting church was pressed upon them. The appeal was responded to in a way which surpassed our expectations. By monthly subscriptions, donations, and thank-offerings, the endowment fund rapidly grew. That the Christians might feel their interest strengthened in the scheme, a committee of their own body was formed to help the Missionary in working the plan.

The precise form that the investment should take was an after-thought. When a considerable sum of money had been raised, it was resolved to invest it in building a row of *pucca* cottages in the compound to be rented by the native Christians. These were built on a vacant piece of land. By and bye European friends, interested by the laudable zeal and liberality of the poor Christians, made generous contributions in aid of their scheme. Thus money continued to flow into the endowment coffers. Then came the idea of substituting *pucca* cottages for the existing mud huts. This was to the poor people a severe trial of principle, for it involved a surrender of their personal claim to their holdings; it moreover involved a heavy loss in the destruction of the houses which they had built: no terms of compensation either were proposed to them, and then there was the certain prospect of their having to pay rent for the new houses which would be erected—houses which their contributions to a great extent were to pay for. Had a few captious spirits at that juncture determined to contest the point in a legal way, it would have been awkward to the last degree. Such was not the case. The cyclone of 1864 occurred at that very crisis. "It is an ill wind which blows nobody any good." That storm wonderfully facilitated our scheme, for it knocked the poor people's

huts about in such a way as convinced them that good *pucca* houses would be decidedly better and safer than the frail tenements which they inhabited.

Thus one by one the hovels disappeared: now 36 substantial cottages have taken their place. These contain in all 70 separate rooms exclusive of out-offices. The houses are built so as to meet the wants and means of different classes in the little community. The smallest houses have but *one* room; the largest house has six; between these are houses with two, three, and four rooms. Each cottage, whether small or large, is complete in itself,—each has its back-yard, cook-house, and *pykhana*. The lowest rent paid is Rs. 2, the highest 20. The average is about Rs. 3 a room. Care has been taken that the whole village shall be thoroughly drained. *Pucca* carriage roads and foot-paths have been constructed; *pucca* surface drains run along the front and rear of the houses; grass plots have been laid out, and trees planted in every direction, so that, as some one lately remarked, “the compound is beginning to have a *park-like aspect*.” Years ago we succeeded by strenuous restrictions and regulations in rescuing the tank from its former polluting influences. The municipal water-pipes, however, running along our southern boundary, suggested another boon for the people. Last year we introduced this water to the great delight and benefit of all the inhabitants. The latest improvement has been the erection of bathing-houses for the two sexes. Each of these has an unfailing supply of municipal water. There is a cock in each, and under the cock a large tub, so that a dozen persons can comfortably bathe at the same time. The entrance to each bath is so covered by a screen-wall that perfect freedom from observation is secured to the bathers.

The total outlay on the cottages, roads, water-works, baths, &c., has been about Rs. 28,000. The total income from rent is Rs. 220 monthly. It will thus be seen that the income is not far short of 10 *per cent.* upon the sum expended. If we deduct 2 *per cent.* for repairs, more than enough will remain for the salary of the native pastor.

Thus the grand object of the scheme, the independence of the congregation, is achieved. A self-supporting church in India is a matter of great rejoicing; but over above that I am convinced a wonderful effect has, by those improvements, been produced on the physical, social, and moral condition of the people. Self-respect now marks them. They feel a *not unbecoming pride* in

looking at their bettered condition ; they feel that it is something to be able to point to those changes, and then say—" We have contributed out of our own pockets Rs. 12,000 towards the cost." Closely allied to this feeling is a desire to rise in the social scale higher and still higher ; accordingly we now find the native Christians most eager to have their children well educated, and it is worthy of note that even now the children of some of them are preparing to compete for the honors of the University.

Nor can it be doubted that the greater privacy and decency secured by the arrangements in the new houses is no small advantage of a *moral* kind.

As regards the *physical* gain, there is still less room for doubt. Year by year, as the improvements have been going on, the healthiness of the compound has been steadily improving. It has been stated that formerly the death-rate was upwards of 10 *per cent.*, now I am thankful it is something under 3 *per cent.*

I am sorry that I cannot forward any diagrams to illustrate what I have written ; but should any member of the Social Science Association be disposed to come over and see what has been done, I shall be most happy ; and I shall be still more happy if the account which I have given of the improvements introduced into our little community should suggest social improvements on a larger scale elsewhere.

LIST OF PRESENTATIONS

RECEIVED FROM JANUARY 1872 TO FEBRUARY 1873.

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Report on the Administration of the Territories under the Lieutenant-Governor of Bengal for 1870-71 and 1871-72, with maps ...	2
Report on the Judicial Administration (Criminal) of the Central Provinces, 1870 & 1871 ...	2
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Report on the Administration of the North-Western Provinces for the year 1870-71 ...	1
Report on the financial results of the Excise Administration in the Lower Provinces, 1871 ...	1
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Report on the Revenue Administration of British Burmah, 1870-71 ...	1
Tables II to XVIII of the Excise Administration Report for 1869-70 ...	1
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Report on the Vaccination Proceedings under the Government of Bengal for year ending 31st March 1871...	1
Education Report of the North-Western Provinces, 1871-72, Parts I & II	2
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Report of the Salt Department, 1870-71	1
Revenue Report of the Province of Oude for the year ending 30th September 1871, Parts I and II	2
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Report on the Land Revenue Administration of the Lower Provinces for the official year 1870-71	1
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An outline of the objects of the Bengal Social Science Association.

The Bengal Social Science Association was founded on the 17th December, 1866, at the suggestion of the late Miss Mary Carpenter, with the object of promoting the development of social progress in the Presidency of Bengal by uniting European and Native gentlemen in the collection, arrangement, discussion and publication of facts bearing on the social, intellectual and moral condition of the people.

The Association is divided into four departments -

1. *Jurisprudence and Law.*
2. *Education.*
3. *Health.*
4. *Economy and Trade*

Papers on subjects falling within these departments are read and discussed from time to time at the ordinary meetings of the Association in Calcutta, and are subsequently published in the *Transactions* of the Association.

The Department of *Jurisprudence and Law* deals with the civil and criminal laws of the country and the procedure of the various Courts of Justice. Without in any way trenching upon the functions of Government or constituting itself a political body, the Association has, it is believed, been instrumental in placing before the public trustworthy information as well as valuable suggestions for the amendment of the law.

In the Department of *Education*, the Association collects facts and details regarding English and Vernacular education and the condition of indigenous literature. The important subject of the education of women has received and is still receiving a large share of attention.

In the Department of *Health*, there is a wide field for the Society's labours in the collection of statistics of life and death, and the consideration of the best means of diminishing mortality, either by improving the skill of the ordinary native practitioners, or by drawing attention to the defects in ventilation, conservancy or the water-supply of the population.

The Department of *Economy and Trade* deals with the consideration of the large class of miscellaneous questions which relate to labour and the social relations of the people. Improvements in agriculture and the mechanical arts receive attention in this Department. The Association also endeavours to acquire accurate local statistics regarding the various trades of the country and the castes and classes by which they are followed, as well as regarding banking operations, and generally whatever may affect the industry and social condition of the people.

All papers, before being read at the meetings of the Association, are required to be submitted for the approval of the Council. When published, the writer is entitled to receive 20 copies of his paper gratis.

With the view of extending the usefulness of the Association, the subscription payable by each member has lately been reduced to Rs. 5 per annum in Calcutta, or Rs. 4 per annum in the mofussil. Membership carries with it the privilege of attending the meetings of the Association, of being eligible for its offices and of receiving a copy of its *Transactions*. A donation of one hundred rupees constitutes membership for life.

The meetings of the Association take place quarterly or oftener, according to the number of papers that are submitted to it for discussion. An annual meeting is held each year, at which reports are read and an address is delivered by the President.

The Association is desirous of renting or otherwise obtaining premises of its own, where a reading room may be opened for the use of members and a library formed of standard works of reference. This proposal, however, can only be carried out either by a large increase in the number of members, or by reviving the old rate of subscription of twelve rupees per annum. It is hoped therefore that all members of the Association will use their best exertions to extend a knowledge of its objects and enlist subscribers from among their friends.

RULES.

OBJECT.

I.—The object of the Association is to promote the development of Social Science in the Presidency of Bengal.

MEMBERSHIP.

II.—Any person who pays an annual subscription of five rupees, or a life subscription of one hundred rupees, shall be a member of the Association.

III.—Every member shall have the right of attending and voting at the annual, quarterly, and special meetings of the Association, of being eligible to any of its offices, and of receiving a copy of its Transactions.

VI.—The annual subscription shall be payable in advance on the first day of January in each year.

V.—Any member whose annual subscription shall not be paid before the end of the year for which it is due, shall be liable to have his name struck off the list of members by the Council. When a member of the Association proceeds on a temporary visit to England, he shall not be considered thereby to have resigned his membership, unless he communicates his intention to do so in writing; but if absent for more than six months, he shall not be called upon to pay a subscription for any year during which he may be so absent.

VI.—Any member desirous of withdrawing from the Association must communicate his wish to the Secretaries in writing, but he will be liable for the subscription of the year in which such communication is received.

VII.—Upon the nomination of the Council, persons eminent for their knowledge of Social Science, or who have rendered important services to the Association, may, at an annual meeting, be elected honorary members of the Association. Honorary members shall have the same privileges as ordinary members, and they shall be exempted from the payment of an annual subscription.

OFFICES AND GOVERNMENT.

VIII.—The Association shall have a President, two Vice-Presidents and two Honorary Secretaries, who are also Treasurers.

IX.—The Association shall be governed by a Council, not exceeding thirty Ordinary Members, besides the above Office-bearers. The Coun-

Rules.

cil may fill up the vacancies in its own body, as well as among the Office-bearers, as they occur during the year.

X.—All Office-bearers and ordinary members of the Council shall be elected at the annual meeting, and shall hold office till the annual meeting next ensuing; they shall be eligible for re-election. (This rule shall apply to all officers elected by the Council during the year.)

XI.—The Council shall ordinarily meet once a quarter, and when specially summoned together by the President of the Association, or at the requisition of any five members of the Council.

DEPARTMENTS AND SECTIONS.

XII.—The Association shall be divided into four Departments: the first, for Jurisprudence and Law; the second, for Education; the third, for Health; and the fourth, for Economy and Trade.

XIII.—The Council shall appoint, from its own body and from other members, four Sections corresponding to the above Departments. The President and Secretaries shall be *ex-officio* members of every Section. Each Section may appoint its own Chairman and Secretary, who, if not already members of the Council, under Rule IX, shall have the right of taking part in its deliberations and of voting at its Meetings.

XIV.—The work of a Section shall consist in collecting, classifying and arranging the papers and information relating to its own Department. For this purpose it may associate with itself other members of the Association.

SUB-COMMITTEES.

XV.—The Council may also form other Sub-Committees of its body for special purposes, and such Sub-Committees shall also have the power of adding to their number other members of the Association. The President and Secretaries are *ex-officio* members of all Sub-Committees.

MEETINGS.

XVI.—The meetings of the Association shall be annual, quarterly, and special.

XVII.—The Annual and Quarterly Meetings of the Association shall be held in Calcutta. The former will be convened by the Council in January of each year, or as soon after as may be practicable, and the latter in the months of January, March, July and November, or as soon after each of those months as may be practicable.

XVIII.—Special meetings of the Association may be convened by the Council at such time and place and for such purpose as it shall think fit.

XIX.—At the annual meeting of the Association, the President or one of the Vice-Presidents, shall deliver an address, and the general and sectional reports for the past year shall be read.

XX.—The quarterly meetings of the Association shall be held for the reading and discussion of papers merely.

SECRETARIAT.

XXI.—The Honorary Secretaries shall, by mutual agreement, divide the duties of their office between them, reporting such arrangement to the Council.

ACCOUNTS.

XXII.—The accounts of the Association shall be audited by two members of the Association, not being members of the Council, who shall be appointed at the annual meeting.

XXIII.—The funds of the Association shall be lodged in the Bank of Bengal, and cheques shall be drawn only upon the signature of the President (or one of the Vice-Presidents) and one of the Secretaries.

BRANCH ASSOCIATIONS.

XXIV.—The Association shall correspond with, and affiliate to itself, Branch Associations established out of Calcutta.

XXV.—As a condition of affiliation, Branch Associations shall pay to the funds of the Parent Association a sum of four rupees per annum for each one of their members, in return for which such members shall be entitled to a copy of its *Transactions*, and to the privilege of attending its meetings in Calcutta or elsewhere.

BYE-LAWS FOR THE CARRYING OUT OF RULES XIII AND XIV.

1. The Chairman of each Section shall preside at all meetings of the Section, whether for the reading and discussion of papers, or for the transaction of ordinary business. The Secretary to the Section shall report the proceedings.

2. So far as regards the collection, classification and arrangement of statistics, and the consideration of communications, each Section shall ordinarily be left to work independently of, and without interference by, the Council. But a report of its operations shall be furnished by each Section to the Council at the close of every year in time for its incorporation with the annual report of the Council.

3. Each Section shall be allowed to incur a contingent expenditure for printing charges, postage and sundries, not exceeding Rs. 20 per mensem. Proposals to incur a larger expenditure shall be submitted for the previous sanction of the Council.

4. The *Transactions* of the Association shall continue to be edited as heretofore by the General Secretaries of the Association; but the

report of the discussions upon any paper shall be drawn up and furnished to them by the Secretary to the particular Section in which that paper was read.

5. If it is thought desirable to print any paper, either wholly or in part, before the meeting at which it is to be read, in order that copies of the paper may be distributed beforehand and the discussion upon the subject thereby promoted, the Section shall make an application to the Council ; and if the printing be sanctioned, the paper shall be made over to the General Secretaries for that purpose.

REGULATIONS REGARDING PAPERS.

1. With a view to direct the communications of members and others into the most useful channels, the Council have drawn up certain heads of enquiry in each department. But it is not intended to confine discussion to these particular subjects ; papers on other interesting topics which may occur to individuals, will also be accepted by the Council.

2. All papers should be sent to the Honorary Secretaries at least one month before the meeting at which they are to be read. On the first page of every paper should be written the subject, and the name and address of the author.

3. As a rule, all papers shall be submitted by the General Secretaries to the Section which they may concern, upon whose recommendation alone they shall be accepted by the Council, provided that, in special cases, in which the President may think it conducive to the interests of the Society, he may, on the inspection of a paper, exercise his discretion in accepting it without previous submission to the Section.

4. A paper will ordinarily be read by its author, or by some friend nominated by him for the purpose ; failing such, it will be read by the Secretary in the particular Department which it concerns.

5. Papers, when read, should be left with the Secretary to the Department, by whom they will be returned to the General Secretary.

6. No paper already published can be read. No paper which has been accepted can be published privately, except by permission of the Council.

7. The Council may print any paper either in whole or in part, or may exclude any paper altogether from the Transactions, as they see fit. Members of the Association will be entitled to twenty spare copies of any papers which they may contribute.

8. All papers should be composed in as clear and concise a style as possible. They should be confined, as far as practicable, to the relation of facts and observations bearing upon the question, and should avoid, as far as may be, the enunciation of general principles and of philosophical theories and reflections. It is quite true that the promotion of Social Science demands that deductions should be drawn from ascertained facts, but it is believed that the requisite *data* have not yet

been accumulated, and that the Association will, for the present at least, be most beneficially engaged in the collection of Social Statistics.

9. With a view to preserve the object with which general meetings of the Association are held,—*viz.*, the discussion of the subjects which may be then introduced,—no paper shall be read in *extenso* which will occupy more than half an hour in reading, but in the event of the paper being longer, a precis or abstract shall be read instead. Such abstract shall be submitted for the approval of the Council, together with the original paper.

10. Speeches of Members taking part in the discussion of any paper shall be limited to ten minutes.

BENGAL SOCIAL SCIENCE ASSOCIATION.

PROCEEDINGS.

The last volume of the Society's *Transactions* was published in 1873, and in that volume the Proceedings of the Association were recorded up to the end of 1871. It is proposed in this place to carry on the history of the Association from the beginning of 1872 to the present time.

The following Report of the Council recounts the Proceedings of the Association during the years 1872 and 1873 :—

Owing to the untimely death of the late lamented Viceroy, who had kindly signified his desire to be present and take part in its proceedings, the annual meeting of the Association was held later than usual,—*viz.*, on the 14th March 1872. It was more numerously attended than on any previous occasion, the audience numbering upwards of 2,000 persons. Among the distinguished visitors present were His Excellency the Viceroy and Lady Napier of Merchistoun, His Honor Sir George Campbell, the Lieutenant-Governor of Bengal, and Lord Napier of Magdala, the Commander-in-Chief. Among the ladies present were three Hindu ladies of the Brahmo persuasion. Dr. Joseph Ewart, the President of the Association, delivered an address on the study of the *Physical Sciences*. He was followed by Babu Keshub Chunder Sen, Chairman of the Education Section, who delivered an *ex tempore* address on the *Reconstruction of Native Society*.

2. There was only one quarterly meeting held during 1872,—*viz.*, on the 26th March 1872, at which Mr. W. Clark, Engineer to the Municipality of Calcutta, read a paper on *Tied Arches for Roofs and Floors of buildings and their construction*, which he illustrated by reference to

numerous drawings and diagrams. There was another paper on the programme, which was not read for want of time, but printed copies of which were distributed to the members present,—*viz.*, *On Village Communities in India and Russia*, by the Rev. J. Long. In addition to these, several interesting papers* were received, but, in consequence of the absence of several members at Simla, and the continued prevalence of the dengue fever, no more quarterly meetings were convened. These papers and the addresses mentioned above have been printed in the 6th volume of the *Transactions*.

3. The Council rejoice to announce that His Excellency the Viceroy and Governor-General has kindly consented to become a Patron of the Association in succession to Lord Mayo. Dr. J. Ewart, who has so ably filled the office of President for the past two years, having intimated his wish to retire, the Council took the opportunity to record that they looked upon his retirement as an irreparable loss, and felt deeply indebted to him for the valuable services rendered to the Association.

4. Mr. T. J. Chichele-Plowden, c.s., one of the Honorary Secretaries, resigned about the beginning of 1872, and the Council take this opportunity to tender their best thanks for the services rendered by him to the Association.

5. During 1873, two quarterly meetings were held,—*viz.*, one on the 25th March, and the other on the 13th September.

At the first, Mr. Geoghegan, c.s., read an exhaustive paper on *Indian Cooly Emigration*, and the Hon'ble Mr. Phear read a valuable paper on *Some Features of Litigation in Bengal*. At this meeting, His Honor the Lieutenant-Governor of Bengal and a number of officials and members were present. These papers, with the debates, have also been published in the 6th volume of the *Transactions*. At the last quarterly meeting, the Rev. K. M. Banerjea read a paper on *Some Social Problems*, which led to an animated discussion.

6. *The Library* has received an addition of 75 volumes during the past two years, for which the best thanks of the Council are tendered.

7. *Finance*.—Abstract statements of the receipts and disbursements for 1872-73 are appended. The total amount of receipts is Rs. 2,861-10-9, and disbursements, Rs. 2,799-7-9, leaving a balance of Rs. 62-3 in favor of the Association, besides fixed assets of Rs. 3,000.

8. *Members*.—The Association now consists of 3 Honorary Members, 15 Life Members, and 187 paying members, including 25 members of the Branch Associations at Konnagur and Mozufferpore.

9. *Presidentship*.—It is a source of sincere congratulation that

* 1. On Model Houses for the Poor, by the Rev. J. Vaughan.

2. On Agriculture in Bengal, by Babu Peary Mohan Mookerjee of Ooterparah.

3. On the Calcutta University, by Babu Chunder Nath Bose, M.A.

the Hon'ble Sir George Campbell, the Lieutenant-Governor of Bengal, despite his arduous and onerous duties, probably unparalleled during any previous Lieutenant-Governorship, has kindly consented to accept the office of President, thus showing his appreciation of, and sympathy with, the objects of the Association.

10. The Council trust that the example set by His Honor will be followed by others occupying conspicuous positions in Government and Science, and stimulate every one interested in the collection and diffusion of information calculated to ameliorate the social condition of the different races inhabiting British and Feudatory India.

CALCUTTA, *1st January 1874.*

The following Resolution was passed at the meeting of the 26th March 1872:—"That this meeting desires to record its high sense of the valuable services rendered to the Association by the Rev. J. Long, who took an active part in its foundation and has always manifested the warmest interest in its affairs. The Rev. J. Long, who has just left Calcutta for Europe in consequence of failing health, after prolonged devotion to the welfare of the people of India, carries with him the best wishes of the Association for the restoration of his health and the continuance of his philanthropic labours, by which he has laid this country under the deepest obligations."

In 1874 an Annual Meeting was held on the 14th January, when the above Report and the accounts for the two previous years were presented, and when an address was delivered by the Hon'ble Sir George Campbell, Lieutenant-Governor of Bengal, who had graciously accepted the office of President. The following members of the Council and office-bearers were elected at that Meeting:—

President :

THE HON'BLE SIR G. CAMPBELL.

Vice-Presidents :

DR. J. EWART and the REV. K. M. BANERJEA.

Council :

HON'BLE MOULVI ABDOOL LUTEEF.	KUMAR HARENDRA KRISHNA BAHADUR.
MUNSHI AMIR ALI.	BABU PEARY MOHUN MUKHERJEE.
BABU KUNJOLAL BANERJEE.	JEA.
DR. S. G. CHUCKERBUTTY.	HON'BLE J. B. PHEAR.
J. GEOGHEGAN, ESQ. C.S.	MANOCKJEE RUSTOMJEE, ESQ.
W. L. HEELEY, ESQ. C.S.	BABU KESUB CHUNDER SEN.
G. W. KELNER, ESQ.	„ SHAMA CHURN SIRCAR.
REV. G. KERRY.	
R. KNIGHT, ESQ.	

Secretaries :

BABU PEARY CHAND MITTER. | H. J. S. COTTON, ESQ., C.S.

No ordinary meeting was held during this year.

In 1875 no Annual Meeting was held, but an ordinary Meeting was convened on the 18th December, when Miss Carpenter delivered an address on *Prison Discipline and Reformatory Schools*, which will be found in the present volume. In this year Babu Peary Chand Mitter resigned the post of Secretary and was succeeded by the present Secretary, Moulvi Abdul Luteef.

In 1876 the Annual Meeting was held on the 23rd February, when the accounts for the previous two years were presented, and the following Council and office-bearers were elected.

President :

HON'BLE SIR R. TEMPLE.

Vice-Presidents :

HON'BLE SIR W. MUIR. | DR. J. EWART.

Council :

NAWAB AMIR ALI KHAN BAHAR.	BABU PEARY CHURN MITTER.
DR. K. M. BANERJEE.	„ PEARY MOHUN MUKHERJEE.
BABU KUNJOLAL BANERJEE.	HON'BLE J. B. PHEAR.
H. BEVERLEY, ESQ. C.S.	MANOCKJEE RUSTOMJEE, ESQ.
J. GEOGHEGAN, ESQ. C.S.	BABU KESUB CHUNDER SEN.
RAJA HARENDRA KRISHNA.	„ SHAMA CHURN SIRCAR.
REV. GEORGE KERRY.	H. WOODROW, ESQ.
R. KNIGHT, ESQ.	

Secretaries :

MOULVI ABDOOL LUTEEF | C. P. MACAULAY, ESQ., C.S.

The usual address was delivered by the Hon'ble Sir Richard Temple, Lieutenant-Governor of Bengal and President of the Association.

An Ordinary Meeting of the Association was subsequently held at Belvidere on the 24th July, when the Hon'ble Mr. Justice Phear read a paper on the *Calcutta Economic Museum*.

The next meeting of the Association took place on the 25th July 1877, and was opened by the Hon'ble Henry Bell, c.s., with the following remarks:—

GENTLEMEN,—Before proceeding to discuss the business which is on the notice paper this evening, I think you will, perhaps, expect that I should say a few words regarding the circumstances under which we are assembled here to-night. You are all aware that the position of the Bengal Social Science Association has, during the past few years, been far from satisfactory. My own connection with the Association commenced at a time when it had reached the lowest ebb-tide of its fortunes. At the commencement of the present year, when our late President, Sir Richard Temple, left for Bombay, I found myself in the position of Vice-President of an Association which had neither head nor members, and which was fast perishing from sheer inanition. I was, indeed, very much like a man on board a sinking vessel, from which the Captain and the crew had departed, and in which only a solitary helmsman was left to keep the ship in her course, and steer her clear of rocks and shoals. That solitary helmsman was our energetic and worthy Secretary; and the question which I had to decide was whether I should leave him in the lurch, or give him such little assistance as I was able to bring the ship of the Association into port. It seemed to me that it was my duty to render what little assistance I could, and the result of our exertions has certainly far exceeded our expectations. I think we may now safely say that the barque of this Association has weathered the dangers that beset it, and I trust that she has entered upon a fresh lease of life, and that she will make many useful voyages of discovery in investigating those great social problems upon the right solution of which depend the prosperity and happiness of the people of Bengal.

It is, gentlemen, just ten years since on this very date, the 25th of July, 1867, the first paper was read before the Bengal Social Science Association; and it may not be uninteresting if I take a brief retrospect of the history of this Association during the past ten years. I do so, gentlemen, the more readily because it is not, I think, generally known what good work this Association has performed. During the past few years the Association, for reasons which

I am unable to explain, has certainly been in a moribund condition ; but there was a time when it adequately fulfilled the purposes for which it was created. No one can read through the proceedings of the years which intervened between 1867 and 1872 without being struck with the great ability displayed in the papers read by the members of the Association upon a great variety of subjects. I say a great variety of subjects, for it is one of the characteristic features of this Association that we do not confine our attention to any particular class of subjects, or any particular section of society. We do not simply discuss questions which affect only the welfare of our Hindu fellow-subjects, but we embrace within the ambit of our discussion all social questions which in any way affect the well-being of any portion of the community.

You will find, gentlemen, if you will refer to the earlier years of the proceedings of this Association, some most important and thoughtful papers upon questions affecting the Mahomedan portion of the community. I particularly allude to two papers on Mahomedan education ; one delivered in 1868 by Moulvi Abdool Lutef, and the other in 1869 by the Rev. J. Long. These papers called forth at the time a considerable amount of discussion, and eventually led to those measures which Government afterwards adopted with the view of improving the system of Mahomedan education. I might also particularize another paper on Mahomedan marriage and divorce. That paper and the discussion upon it were productive of the best results ; for they brought to the notice of Government the necessity of re-appointing *Kazis* in all the districts of Bengal. I would also allude to two other very able papers which were delivered by my friend Babu Keshub Chunder Sen on the important question of female education. I have no hesitation in saying that these two papers have treated the subject of female education in a manner in which it has seldom been treated elsewhere, and they have exercised a great influence upon the subsequent treatment of that most important subject. I could mention a great many other papers of marked excellence which are to be found among the proceedings of the earlier years of the Society ; but my object in alluding to these papers was merely to show that our discussions in time past have not been barren of results. It is sometimes said that we only talk, and do nothing ; but it is of the very greatest importance that questions which affect the social well-being of our community should be intelligently discussed. Lord Mayo, who was one of the Patrons of this Association, and who took a warm interest in its welfare, shortly before his untimely death, declared that he considered that this Association was capable of doing a great deal of good in promoting the advancement of knowledge and the amelioration of the people, particularly of the poorer classes, who were unable to take sufficient care of themselves. He trusted, he said, that this Association would persevere in its noble endeavours to collect,

classify, and publish useful information, thus rendering important aid to the Government and the community at large. And perhaps, gentlemen, there is no country where it is so difficult to collect information with regard to the poorer classes as in India. In England and in other European countries there is, except perhaps in some of our larger cities, a sympathy of feeling between the poorer and the richer classes of society,—a feeling which the ladies of the upper classes in those countries do much to promote by visiting the poor in their homes and ascertaining their feelings and their wants. But the system of seclusion which prevails in this country, prevents the ladies of India from entering upon those spheres of usefulness which their sisters in European countries enjoy, and the consequence is, that we in India are cut off from a source of information regarding the lower classes which is available to us in European countries.

Then, there is another difficulty in Bengal in dealing with questions affecting the rural population. The zemindar and the rayat are often antagonistic to each other. Each has rights, and each has interests in his lands, and it is often a very difficult matter to adjust their rights and interests in a manner which will be fair and equitable to both sides. Now, for the discussion of questions of this nature our Association is peculiarly adapted. We represent no particular section of the community. We are neither zemindars, nor rayats. We desire to preserve to the zemindar his privileges, and maintain the rayat in his rights. But the difficulty is to adjust these rights and these privileges. How this can best be done is a subject which, I trust, will at no distant date be calmly discussed by this Association. Another subject which this Association has already discussed is female education. I am sure that every gentleman in this room will agree with me that this is a subject which is by no means yet exhausted. Of all the social questions which have been brought forward in this generation, the question of female education is one of the most important. It is indeed almost impossible to exaggerate its importance. Its effects will be felt in every home, except perhaps the poorest homes, in this country. Now, it is impossible to deny that there are difficulties in the way of female education. Men of conservative minds, who are wedded to old ideas and old prejudices, are always averse to change, and we ought to pardon them if they view with apprehension so great an innovation as the education of their wives and daughters. They see, and they cannot help seeing, that if you educate the women of this country, you cannot expect, when the light of knowledge has dawned upon them, that they will continue to be satisfied with those pursuits which at present constitute the occupation and pleasure of their lives. Therefore I think that this, too, is a subject which may well occupy your attention; and if you are able to suggest any means by which the difficulties in the way of female education can be removed, you will render an inestimable service to your country.

There is another subject on which, I confess, I feel very deeply ; and it is also a subject which, I think, might well be taken in hand by this Association. You are aware that among the youth of this country there is a growing desire to finish their education in England. Among orthodox Hindu society there is, as you all know, a very great objection to a Hindu youth going to England at all. I am aware that by the laws of caste you are prohibited from crossing the black water ; but these laws of caste are not like the laws of the Medes and Persians immutable. Laws of caste were made to meet the needs of society ; and when these needs change, the laws of caste should necessarily change with them. For assuredly man was not made for caste, but caste was made to subserve the interests of man. But apart from the question of caste, there are also other very serious difficulties in the way of Indian youths prosecuting their studies in England. The great advantage of education is not merely to read books, and to acquire the knowledge of books ; it is equally, or more, important that youths should be subjected to the influence of association, and this influence is pre-eminently afforded by the great public schools and Universities of England. If Indian youths are at the expense of going to England, we ought, I think, to be able to offer them the advantages of a University education. I should like to see the youths of this country going to the great centres of education in England, such as Oxford and Cambridge, and there receiving that education which I believe these Universities alone are peculiarly fitted to impart. I may mention that I wrote a few weeks ago to Professor Monier Williams, and asked him what he was at present doing upon this subject ; and when I receive his reply, I will bring this matter again before the Association. The subject is one upon which I feel very deeply, for I feel that those youths who go from this country at present do not get that education and those advantages which they ought to derive from the long journey they have to undertake.

And now, gentlemen, having glanced very briefly at the work which has been done by this Association in the past, and also indicated a few topics for discussion in the future, it remains for us now to consider how we can best give practical effect to the ends for which this Association was originally called into existence. Of late years we have trusted too much to inaugural addresses ; but, if we are to make this Association of any practical use, we must trust a great deal more to ourselves. I hope that when the Council meets, they will be able to promise us, at least, bi-monthly meetings. There is no lack of subjects for discussion, and there ought to be no difficulty in this large community in obtaining papers from men who have made a particular subject their special study. Another very important point in connection with these papers is, that we should circulate them earlier than we have hitherto been in the habit of doing. After a paper has been read before the Association, arrangements should be

made for at once printing it, and the discussion upon it; and the papers should then be circulated, in order to keep alive interest in the subject. And now, gentlemen, before sitting down I must do what, I am sure, you will all expect me to do, and that is, express the obligations which this Association is under to Moulvi Abdool Luteef. If this Association is resuscitated, as I hope and trust it will be, and enters upon a new career of vigour and usefulness, it will be entirely owing to the exertions of my friend Moulvi Abdool Luteef; and I can only trust that he may live many years, and that every year he lives he may see this Association growing in usefulness and influence. And I feel confident that it will grow in influence and usefulness year by year, if we will only make up our minds to surrender some small part of our time and leisure to promote the great objects which we all have in view.

At this meeting the following alterations were made in the Rules of the Association :—

In Rule II the word “five” was substituted for “twelve,” thus reducing the annual subscription from Rs. 12 to Rs. 5.

In Rule IX the words “not exceeding thirty” were substituted for “consisting of fifteen,” and the Council was empowered to fill up vacancies among the office-bearers as well as in its own body.

The wording of Rule XVII was slightly changed so as to allow of the Annual and Quarterly Meetings being held in any month of the year.

In Rule XXV the word “four” was substituted for “six.”

And to the Regulations regarding Papers, the following paragraph was added—

10. Speeches of members taking part in the discussion of any paper, shall be limited to ten minutes.

These alterations have been duly noted in the Rules and Regulations printed in the present volume.

The following Office-bearers and Members of the Council were elected at this meeting :—

Vice-Presidents :

THE HON'BLE H. BELL, C.S. | C. T. METCALFE, Esq., C.S.I., C.S.

Council :

H. BEVERLEY, Esq., C.S.	MANOCKJEE RUSTOMJEE, Esq.
THE REV. DR. K. M. BANERJEE.	ANAND MOHUN BOSE, Esq.
PRINCE MAHOMED RUCHEEMOODEEN.	BABU JODOO LALL MULLICK.
W. H. GRIMLEY, Esq., C.S.	„ SREENATH GHOSH, ROY BAHADOOR.
BABU KOONJO LAL BANERJEE, ROY BAHADOOR.	„ RAJENDRA NATH MITTER.
PRINCE MIRZA JAHAN KUDDIR BAHADOOR.	„ KANNY LALL DEY, ROY BAHADOOR.
A. W. CROFT, Esq.	BROJENDRO KOOMAR SEAL, ROY BAHADOOR.
RAJAH HARENDRA KRISHNA BAHADOOR.	„ PEARY MOHUN MOOKERJEE.
PRINCE MAHOMED NUSSEEROODEEN HYDER.	„ DWARKANATH BISWAS.
R. KNIGHT, Esq.	„ BHUGGOBI TTY CHURUN MULLICK.
BABU KESHUB CHUNDER SEN.	„ KALI MOHUN DASS.
NAWAB AMEER ALI, KHAN BAHADOOR.	„ KALI PROSUNNO GHOSE.
DR. R. C. CHUNDRA.	MOULVI ABDOOR RAUF
THE HON'BLE ISSER CHUNDER MITTER, ROY BAHADOOR.	BABU JOGESHI CHUNDER DUTT.
	„ PRAN NATH PUNDIE SARRASWATI.
	„ NILMONEY DEY.

Secretaries :

H. M. TOBIN, Esq., C.S.

MOULVI ABDOOL LUTEEF, KHAN BAHADOOR. •

The accounts for the past year were presented, and it was resolved that, considering that so little had been done by the Association of late, those Members who had paid their subscriptions up to 1876 should be excused the payment of any subscription for the year 1877.

The following Resolution was passed at this Meeting :—

“That this Meeting desires to record its deep sense of the loss sustained by the Bengal Social Science Association by the death of Miss Mary Carpenter, who was one of the original promoters of the Association.”

In proposing the Resolution, Babu Keshub Chunder Sen spoke as follows :—

I feel no hesitation in acceding to the request which has been made by the Hon'ble Chairman. I feel that I ought not to stand back when I am summoned to offer the tribute of gratitude, not only of this Asso-

iation, but also of the entire nation to which I belong, to the memory of so devoted a philanthropist as the late Miss Mary Carpenter. The name of Mary Carpenter is no strange sound, but is quite a household word in England as well as in India. The philanthropic services rendered by that lady in the cause of social reformation in both these countries, extending over a period of 50 years, are too well-known all over the world to call for any special eulogy or commendation from me. In acknowledging these services we are but discharging a duty. I do not mean the formal discharge of a dry duty. In moving this resolution, I cannot but be fully and gratefully alive to the gravity and reality of the obligations under which we lie to Mary Carpenter, one of the original promoters and founders of this Association. Her philanthropy was not sentimental but practical. No dark mystery enshrouded her philanthropy; no dreamy sentiment lent it a false glitter. There was no romance in the reality of her work. She discharged her duty to her country in a most practical, straight-forward and business-like manner. She belonged to that practical school of English reformers who *did* and not merely *said*—whose motto was “deeds not words.” Nor did she allow herself to be lost in the immensity of ambitious and impracticable schemes of reform. She avoided high flights and dreamy speculations, and always proceeded to her work direct. She always undertook what she thought to be feasible and practicable, and never went beyond her immediate duties. Whether in England or in India, she always kept her mind and her heart concentrated on one definite object; to that she devoted all her attention and energy, and that she carried out with remarkable singleness of purpose. When I say all honour is due to her philanthropy, I do not mean to say that whatsoever she did in the interests of England or of India has been endorsed or is likely to be endorsed by all right-thinking persons. She was not free from errors. Her schemes were not altogether unexceptionable. On more than one occasion I myself had to differ with her on important questions of social reformation, and in nothing so much as in her attempt to import into India thoroughly English ideas and institutions without any effort towards adaptation. In such attempts she was resisted by many of the most thoughtful and advanced men in India. In spite of such differences of opinion, however, all are bound to acknowledge with sincere gratitude that she has laid us and our country under immense obligation.

Born in Exeter, in 1807, of noble parents, Miss Carpenter received most favorable impressions in her early days, which moulded her character in a way best adapted to her future career. To convince you that her early life at home was surrounded by the best influences possible, I need only mention the fact that her father was the celebrated Reverend Lant Carpenter, whose name is associated with that of India's illustrious reformer, Rajah Ram Mohan Roy, in the memory of every native of this country. She had also an excellent mother to guide her

by her precepts and example. It seems that Miss Carpenter was naturally of a philanthropic turn of mind. For she had scarcely finished her own education in Bristol, where her father removed with his whole family when she was only ten years of age, when she adopted the vocation of a teacher, and undertook to impart the blessings of a liberal education to those around her. In conjunction with her honoured mother and her sisters, she opened a school for the education of young ladies of the upper classes, and for twenty years she conducted it with evident success. But she was not content with her labours in connection with this institution. Her object was a higher one. In other words she wanted to go lower down in the scale of humanity to find a suitable sphere of occupation among the more neglected classes. She was not content with disseminating the blessings of education among respectable and well-to-do people. She would carry the light of education among the lower classes of society. With the aid of a number of friends she succeeded in establishing a workman's hall for the benefit of the labouring classes in Bristol. That was the first step she took in her public career. Even this, however, did not satisfy her benevolent heart, still longing to reach the very lowest stratum of society. Her sympathy was drawn towards those who had not yet been reached by philanthropic societies. She accordingly co-operated with her friends in bringing together forlorn children, friendless, homeless and penniless, and these were put in Ragged Schools, and brought up under good teachers. In these schools, barbarous-looking street Arabs were cared for and converted into useful citizens. But there was yet another class to be reached, more degraded, more destitute and more dangerous, too, than those yet brought under ameliorating influences by the philanthropists of the age—juvenile delinquents who had wrecked their character and become frightful scourges of society. Miss Carpenter's large-hearted benevolence directed itself towards the reclamation of this wild and hopelessly degraded class of youthful criminals. She put her whole heart and soul into the work, and opposition, which was inevitable, only aggravated her zeal. There were great difficulties in the way, but Miss Carpenter was prepared to encounter and overcome them. Legal power was required in order to bring these juvenile offenders under the salutary influence and strict discipline of Reformatory schools. The law of the land must give the managers of these Reformatories power to stand in the relation of parents to these children. How was this to be done? It was at this time that Miss Carpenter made the acquaintance of that celebrated philanthropic and estimable woman, Lady Noel Byron. In concert with her, and through her influence, she energetically developed the Reformatory movement, and brought it to a successful issue. At last, in the year 1854, under the pressure of public opinion, Government was compelled to pass an Act for the better care and reformation of youthful offenders. About this time something practical was also done. Miss Carpenter succeeded in establishing a Reformatory for boys in a village near Bristol, and another for girls

in the city itself, in that commodious house known as the Red Lodge—a house which possesses some degree of historic interest and suggests reminiscences of the days of Queen Elizabeth, and was, at one time owned by the celebrated Dr. Pritchard. With this institution, the Red Lodge Reformatory, Miss Carpenter was identified ever since its foundation till the day of her death,—the chief work and glory of her philanthropic life. There, from day to day, Miss Carpenter might be seen working most indefatigably at her post to ameliorate the condition of the poor and the degraded. And the excellent internal economy of that well-regulated institution, no less than the actual results of its working, must always afford conclusive evidence of the generous zeal of Mary Carpenter. The Red Lodge has proved a decided success. Speaking of the number of converted juvenile offenders who were in the Reformatory, she said, in the course of an address delivered during her first visit to this city:—“Out of 70, 60 have turned out well, and one only has been a second time in prison.” Now, it appears from this that she achieved a vast amount of success. When she first embarked upon this difficult enterprise, she was beset with obstacles of an almost insurmountable character, and many of the best men and women of the time discouraged her and threw difficulties in her way, and yet she succeeded at last. Not only did she succeed but she rejoiced in her success. She said:—“I wish I could impart to you the joy I have had in hundreds of cases of reformation.” She always rejoiced in going about and doing good in a disinterested and self-denying spirit. Great was her self-denial. And of this she gave most over-powering evidence in her visits to this country, undertaken amid the infirmities of age and at the risk of health and life. It was in 1866 that she first visited India, the land of Rajah Ram Mohan Roy. I believe it was her sincere regard for that distinguished reformer that first directed her heart towards the East and led her to visit India. When she came out here she directed her attention to several subjects affecting the social well-being of our community. The subject of prison discipline attracted her interest and exercised her mind considerably; and she went about visiting jails and studying their internal economy; and she offered numerous suggestions to Government with a view to improve the system of discipline which obtained in those institutions. But the chief subject which occupied her attention and energy was Native female education. Her heart was naturally drawn towards her own sex, the elevation of the condition of her Indian sisters. What did she do? Indian female education was a vast subject; but Miss Carpenter was wise enough to see that if she allowed her energies to be frittered away upon a variety of indefinite schemes of female improvement she would not be successful. She, therefore, took up one of a specific nature, and that was to train up Native female teachers. It will, I believe, be acknowledged by all men who know anything about the state of female education in India, to be one of the most important, and, at the same time, one of the most

difficult problems of the day. Women ought certainly to be educated by women. For, in the first place, it must be generally admitted that women ought to be educated and trained up as women, and not as men. In order that women may be educated and trained up as women, and their feminine nature fully developed, they must be educated by women teachers. This is a most important social principle, and one which challenges the assent of all thoughtful and unbiased men. It appeared to Miss Carpenter, as it had, indeed, appeared to many of us before, that much good would come from placing Native girls in the Zenana, as well as in public schools, under the tuition of qualified Native female teachers. At present they are taught by an inefficient body of male teachers who never learnt how to teach women, and are wholly ignorant of their tastes and capacities,—men who are at best able to afford their pupils a course of dry and abnormal instruction quite unsuited to the female mind. Surely the old *gurumohashoys* and Pundits cannot impart sound education to our women. Even the best of male teachers, however cultivated their minds, however profound their scholarship, are assuredly unfitted to afford that peculiar training which woman needs. We must place the female mind under the humanizing influence of female teachers. In order to accomplish this object of training female teachers most effectually, Miss Carpenter addressed the Government of India here and also the Secretary of State in England, and went on agitating the matter until Government was obliged to pass a resolution calling upon the local Governments to help Miss Carpenter in giving effect to her excellent proposal. The scheme was tried in all the Presidency towns, but unfortunately it proved a failure in Calcutta. An adult class was opened, in connection with the Bethune Girls' School, in Cornwallis Square, but it ere long collapsed. The Normal School, started in the Western Presidency, has proved a perfect success, and is in a most flourishing condition. I do not know exactly how matters stand in Madras at present. On the whole the movement has not been unsuccessful in India. Judging from results, one must admit that throughout the country Miss Carpenter's visit gave a fresh impulse and impetus to the cause of female education generally, and adult education in particular. Not a few adult schools and normal schools have since been founded here, in East Bengal and elsewhere, and these, no less than the direct results of her exertions, unmistakably prove the success of Miss Carpenter's mission in the East. She subsequently paid two more visits to India; her second visit did not extend to Bengal. What, however, more immediately concerns us this evening, is the fact that Miss Carpenter was one of the original promoters of this Social Science Association. We well remember the day when Miss Carpenter, in the rooms of the Asiatic Society, first gave out her views regarding the desirability of forming such an Association as this before an appreciative audience, in the presence of the then Governor-General and Lieutenant-Governor of Bengal. With the aid of the Rev. Mr. Long, and a few other persons of a philanthropic disposition, she went to work with her usual earnest-

ness, and the result of their exertions was the foundation of this Association under whose auspices we have met together to-night. Let us all hope that this Association will always cherish, with the profoundest feelings of gratitude and esteem, the memory of that distinguished philanthropist, Miss Mary Carpenter, and—may I venture to add—that this Association will regard the promotion of Native female education as one of its primary objects.

The Reverend Father E. Lafont, in seconding the Resolution, spoke as follows:—

It is with very great pleasure that I respond to the kind invitation that was made to me this evening just as I came in to second the resolution which has been so ably proposed by Baboo Keshub Chunder Sen. The able and exhaustive manner in which the last speaker has proposed this special resolution, renders my duty comparatively easy. Though I cannot, I confess, advocate what goes now-a-days under the name of "Woman's Rights," when I see a lady translating the phrase "woman's rights" into "woman's duties" and discharging those duties in the manner Miss Mary Carpenter did, I confess that my heart rejoices, and I wish to see many ladies of the same stamp as Miss Mary Carpenter. Gentlemen, woman has been given by God as a companion and help-mate to man. We have in Miss Carpenter the spectacle of a lady discharging all the functions of a woman on a very great scale. Miss Carpenter was an unmarried lady, and just because she was an unmarried lady she became a help-mate, not only to man but to woman also, and also to humanity in general. She was not wedded to a single individual, she wedded herself to mankind, to the sufferings of mankind—and for this we ought to admire her. She had in her bosom feelings and promptings which would have been ill-fitted to the limited circle of a family. Her philanthropy knew no bounds, and extended not only to the poor of Bengal but to all parts of the British Empire; and if she has no children to bemoan her loss, she has millions of the poor who do so, and who recognize in Mary Carpenter a true and benevolent mother.

The following Resolution was then proposed in suitable terms by the Hon'ble Isser Chunder Mitter, seconded by Babu Kunjolah Banerjea and supported by the Rev. C. K. Dall, Babu Kalimohun Dass, and the Chairman.

"That this Meeting desire to record the obligation they are under to Mr. J. B. Phear for his valuable services to the Association, and their sense of the loss the Association has sustained by his departure from India."

The Resolution was duly carried.

The Rev. Dr. Banerjea then proposed—

“That His Excellency Sir Richard Temple, Bart., K.C.S.I., be elected an Honorary Member of the Association in recognition of the valuable services rendered by him while President of the Association.”

The proposition was seconded by Babu Hemchunder Kerr, and unanimously carried.

During the current half-year the Association has held three ordinary meetings, at which papers were read by Dr. K. M. Banerjea, Mr. H. Beverley, and Dr. K. McLeod. These papers will be found in the present volume. Mr. Bell having, owing to want of leisure, resigned the office of Vice-President, it was offered to, and accepted by Mr. Beverley. On his election at the meeting of the 23rd April 1878, Mr. Beverley made the following remarks:—

Ladies and Gentlemen, I have to thank you very warmly for the honour you have done me in again electing me Vice-President of this Association, as well as for the very flattering manner in which you received the proposal of my friend, Babu Jadukul Mullick. I have also to congratulate you on meeting together once more after a rather long interval, and to express the hope that our meetings in future may not be of so uncertain and unfrequent occurrence as they have been of late years. As my friend has been good enough to remark, I have been connected with this Association ever since its foundation in 1866, more than eleven years ago. During the first half of that time, I think I may say that this Association was very fairly industrious and successful. You are aware that it is divided into four departments, which deal respectively with the subjects of (1) Jurisprudence and Law; (2) Education; (3) Health, and (4) Economy and Trade. Now in Jurisprudence and Law there have been 13 papers read, in Education 15, in the Health section 6, and under Economy and Trade no less than 26. Besides these papers, we have had altogether nine annual addresses delivered to us by the Presidents of the Association from time to time. The Association has had the good fortune to be always regarded with favour and approval by the governing authorities for the time being. Viceroys and Lieutenant-Governors have generally been amongst your patrons. Lord Lawrence and Lord Mayo took a very great interest in the Association. Sir George Campbell and Sir Richard Temple each occupied for a time the office of President and, as such, delivered addresses to members of the Association. Moreover, many of the papers that have been read here have attracted the notice of Government, and some of them, I may say, have resulted

in either legislative or executive measures. Latterly, however, ladies and gentlemen, your Association has dragged on somewhat of a torpid and inglorious existence. Not that the Association has ever been in want of well-wishers. Mr. Bell and others whom I could name have, as you are aware, taken the greatest interest in the proceedings of the Association, and done what they could to promote its welfare. Unfortunately their exertions did not meet with the support which they deserved, and thus there has been an apparent want of activity for some time past. Our meetings have been few and far between; our *Transactions* have almost ceased to exist. Well, your Council was of opinion, that this state of things ought not to continue any longer; and accordingly, we lately met in some force to consider what steps should be taken to resuscitate the Association and infuse new life into it. We thought that, looking at the good work the Association had done in former years, and also to the fact that this is, I may say, almost the only common ground upon which European and Native gentlemen can meet together, to associate in friendly intercourse, to exchange ideas and learn to know each other better—we thought it would be a pity to sign the death-warrant of the Association without making another effort to save its life. So, if you will allow me to detain you for a moment, I will explain to you what your Council propose to do.

In the first place, as you are all well aware, we have no habitation of our own, so to say—no place where we can hold our meetings, have our office, and where a library of standard works of reference may be formed for the use of members of the Association. We accordingly determined to apply in the first instance for the use of a room in the Dalhousie Institute, and steps are being taken in that direction which I trust will result in a satisfactory arrangement. Then, we thought, it had been a mistake to hold as it were “Congresses” at which a large number of papers were advertised to be read; such congresses generally only managed to get through one or two papers at each of its sittings, the discussions were cut short, and those members whose papers had to be postponed naturally felt somewhat aggrieved. We also thought that it would infuse greater life and activity into the Association if we were to hold more frequent meetings, and have only one paper read and discussed at each meeting. We propose therefore to hold a meeting at least once a month. Then we thought it would be a good thing, if we could manage it, to arrange for some social meetings or conversaziones at which we might meet and interchange ideas, without having any set paper read to us, and without that formality which attaches to public meetings. The Council has this matter under consideration, and we hope that something will come out of it. The office of President was vacated by Sir Richard Temple when he took his departure for Bombay, and I am sorry to say that at the present time, we do not possess a President. But we have thought it better, before inviting any other gentleman to occupy that office, that we

should show that we are actively alive and doing something, and we therefore propose for the next few months to carry on the work, so far as we are able to do so, without a President. You have, as you are aware, two Vice-Presidents. Unfortunately Mr. Metcalfe has been prevented from being present here to-day, but I can assure you that he takes the greatest interest in your affairs. You have also a very strong Council, and I think that if only you will second its exertions the Association has still a career of great promise before it. But what is wanted is this:—you must remember, that an institution like this cannot be carried on by one man or two men, and that unless we have the support of the great body of members, and unless gentlemen send in papers to be read and published in our *Transactions*, the Association must languish and your Council cannot save it. I find that several papers which have been read before the Association have not yet been printed and circulated; among them are two valuable papers by Miss Mary Carpenter and Mr. Justice Phear. These papers will be sent to press without delay and I hope before long your Council will be able to present you with a new volume of *Transactions*.

CALCUTTA, 29th June 1878.

	Rs. A. P.	Rs. A. P.
To Balance in the Bank of Bengal on 1st January, 1872,	529 1 0	617 5 3
To balance in hand on 31st January, 1872,	3 9 9	44 6 0
To Subscription Account—		25 10 0
For 1870,	40 0 0	222 10 0
" 1871,	311 0 0	679 3 0
" 1872,	502 0 0	55 1 0
	853 0 0	1,624 3 3
Life Subscription,	100 0 0	
Transactions Account,	188 0 0	
Postage Account,	6 15 0	
Interest on Government Securities,	40 0 0	
Commission on Printing,	30 0 0	
Total,	1,750 9 9	1,750 9 9
By Establishment Charges,		
Postage Account,		
Stationery and Petty Charges,		
Meeting Charges,		
Printing and Advertisements,		
Library Account,		
Balance in hand on 31st December, 1872,	60 0 6	
Balance in the Bank on 31st December, 1872,	66 6 0	
Total,	1,750 9 9	1,750 9 9

Examined and found correct.

R. N. MITTER,
H. M. RUSTOMJEE,

NILMONEY DEY,

Assistant Secretary.

DR. *Abstract of Receipts and Disbursements for the year 1873.* CR.

	Rs. A. P.	Rs. A. P.	
To Balance in the Bank of Bengal on 1st January, 1873,.....	66 6 0	By Establishment Charges,	670 12 6
To Balance in hand on 31st January, 1873, ..	60 0 6	„ Postage Account,	18 0 0
„ Subscription Account—		„ Stationery and Petty Charges,	14 2 0
For 1871,.....	39 0 0	„ Meeting Charges,	10 14 0
„ 1872,.....	156 0 0	„ Printing and Advertisements,	461 8 0
„ 1873,	326 0 0		
	521 0 0	Balance in hand on 31st December, 1873,	1,175 4 6
„ Transactions Account,	270 0 0	Balance in the Bank on 31st December, b.r., 1873,.....	17 1 0
„ Postage Account,	22 8 0		45 2 0
„ Interest on Government Securities,.....	297 9 0		62 3 0
Total.....	1,257 7 6	Total.....	1,237 7 6

NILMONEY DEY,

Assistant Secretary.

Examined and found correct.

R. N. MITTAR, }
H. M. RUSTOMEE, } *Auditors.*

	Rs. A. P.	Rs. A. P.	
To Balance in the Bank of Bengal on 1st January 1874,	45 2 0	By Establishment Charges,	648 0 0
„ Balance in hand on 1st January 1874,	17 1 0	„ Postage Charges,	4 2 0
„ Subscriptions realized—		„ Stationary Charges,	10 6 0
For 1871,	12 0 0	„ Meeting Charges,	71 2 0
„ 1872,	48 0 0	„ Printing and Advertisements,	310 4 5
„ 1873,	310 0 0	„ Library Account,	32 10 0
„ 1874,	468 0 0	„ Petty Charges,	9 13 0
			1,086 5 5
Contribution received,	838 0 0	By Balance in hand on 31st Decem-ber 1874,	9 4 0
„ Interest on Government Securities,	104 14 9	„ Balance in Bank on 31st Decem-ber 1874,	29 8 4
			38 12 4
Total,	1,125 1 9	Total,	1,125 1 9

NILMONEY DEY,

Assistant Secretary.

Examined and found correct.

I. C. MITTER,	} Auditors.
R. N. MITTER,	

Dr. *Abstract of Receipts and Disbursements for the year 1875.* Cr.

	Rs.	A.	P.		Rs.	A.	P.
To Balance in the Bank of Bengal on 1st January 1875,	29	8	4	By Establishment Charges,	469	8	0
" Balance in hand on 1st January 1875,	9	4	0	" Postage Charges,	0	10	0
" Subscription Account—				" Stationary Charges,	0	14	0
For 1873,	12	0	0	" Printing and Advertisements,	7	8	0
" 1874,	53	0	0	" Petty Charges,	2	0	0
" 1875,	313	0	0				
	378	0	0				480 8 0
" Transaction Account,	10	0	0	By Balance in hand on 31st December 1875,	26	8	0
" Interest on Government Securities,	120	0	0	" Balance in Bank on 31st December 1875,	39	12	4
							66 4 4
Total,	546	12	4	Total,	546	12	4

NILMONEY DEY.

Assistant Secretary.

Examined and found correct.

I. C. MITTER. }
Editors.
 R. N. MITTER. }

Dr. *Abstract of Receipts and Disbursements for the year 1876.* Cr.

	Rs. A. P.	Rs. A. P.	
To Balance in the Bank of Bengal on 1st January 1876,	39 12 4	By Establishment Charges,	89 1 0
" Balance in hand on 1st January 1876,	26 8 0	" Meeting Charges,	11 12 6
" Subscription Account—		" Printing and Advertisements,	103 3 0
For 1874,	1 0 0	" Stationary Charges,	2 8 0
" 1875,	3 0 0		206 8 6
" 1876,	208 0 0	By Balance in hand on 31st Decem- ber 1876,	45 15 6
Transactions Account,	212 0 0	" Balance in the Bank on 31st Dec- ember 1876,	39 12 4
	14 0 0		85 11 10
Total,	292 4 4	Total,	292 4 4

NILMONEY DEY,
Assistant Secretary.

Examined and found correct.

I C. MUTTL. }
R. N. MITTER } *Auditors*

BENGAL SOCIAL SCIENCE ASSOCIATION.

ADDRESS

HON'BLE SIR GEORGE CAMPBELL,

PRESIDENT OF THE ASSOCIATION.

[Delivered on the 10th January 1874.]

GENTLEMEN,—I may say, Ladies and Gentlemen, for I believe there are many lady members of this Association,

I beg to return you my very best thanks for the honor which you have done me in electing me your President. There is, I believe, one penalty attached to that office. It is expected that the President who has been elected should give an address to the meeting on this annual occasion. I fear I must apologise, and I am sure you will accept the apology, that my work at present has been of so pressing a nature, that it has been totally impossible for me to prepare anything which I may deliver to you as an address worthy of such an occasion. It possibly might have been more fitting that, this being so, I should have excused myself, and have asked that the chair be filled by one more worthy and better able to perform its duties. But I have ventured, notwithstanding my unpreparedness, to accept this office and come down here to-day, because I wished, in simple words, to express to you my wish for the success of this Association, and my belief

that it ought to fill a greater part than it has yet filled in this city and in this country. I by no means mean to say generally that this Association has not hitherto performed very good and very useful work ; but I do say that it ought to occupy a still greater place, a still more influential place, than it has yet occupied. My opinion is that an association of this character should become in this country a sort of Social Parliament, where great subjects may be discussed, and great influence may be exercised. Gentlemen, in this country it is impossible we can have political freedom ; the circumstances are such that political freedom is, at this moment, impossible. But, on the other hand, we enjoy—the people of this country enjoy—the very utmost social freedom. I believe that there is no country in the world in which social freedom is enjoyed in a greater and more complete degree. That being so, it appears to me that this country of all others is one in which social freedom ought to flourish in the shape of associations, where social questions may be openly discussed, and in which great and good and learned men may propound their views, and, rubbing their views one against another, come to conclusions which should influence the Government, and influence the movements of society.

In undertaking a work of this kind, I am sure that this Association has before it a field of enormous magnitude and enormous importance. In regard to Social Science, we have in this country what I may call a virgin soil, of immense width and depth. There are questions, burning questions, in this country, affecting great populations and great provinces, which are yet to be solved. There are great questions of this kind, I may say almost all questions of this kind, that have yet to be solved ; and the very commencement of their solution has yet to be undertaken. It is for this Association to make that commencement. This Society has already made that commencement, but I am of opinion that it ought to go on acquiring force, attaining at the end objects greater than those of which it has made a commencement. The questions which it is for us to discuss are difficult questions. Questions which arise in this country are unsolved to a great degree I believe, because they have not yet been fully discussed. It is the case, unfortunately, that the best minds do not agree upon the most difficult questions in this country. Whether it be European with European, Native with Native, or European with the Native discussing, we find a vast difference of opinion ; we have not found a general or universal concurrence in anything. I remember a story which is told of a very eminent man—it was Lord Ellenborough, I believe—who said that in India he met very

many great and excellent men who were distinguished by a knowledge of the country—men who gave opinions of the utmost value on different subjects; but one difficulty was that of all these great men, never yet was found one to agree upon any one thing connected with India with any other. That, Gentlemen, is the case to a certain extent, because these subjects, as I have said, are virgin subjects; because they have not been fully discussed; because men have never been brought together, so that, by argument and discussion, truth is evolved, facts are evolved, and conclusions at last arrived at, after a great deal of discussion and argument. I am sure that it is for a Society of this kind, taking the place of a Social Parliament, to evolve the truth by open discussion, by many meetings, by many conflicts of wits and opinions. In taking part in discussions of this kind, Europeans and Natives may meet upon common ground; and I am sure that no people in the world can be more competent and more fitted to take part in discussions like these than the educated Natives of Bengal. I have often seen in assemblies in this country large numbers of Native youths of Calcutta with eager faces and animated countenances, who evidently took the deepest and most lively interest in the subjects discussed. The Bengalis of this city and country have received a highly intellectual education; they are now prepared to make use of that education, and they can do so in no better way than in discussing questions which this Society may place before them. It may be that the Bengali will never attain the height to which they aspire of becoming the Scotchmen of the East; but they may at least become the Athenians of the East. They have all the intellect of the Athenian, if not all the vigor of the Scotchman. Well, then, I say that if a Society of this kind fulfils the objects which it might fulfil, it may exercise a great, a very great, influence in the country, and make this country a different country from what it has been hitherto. I will only mention two or three subjects by way of instance, regarding which this Association may well occupy itself, and, by so doing, do universal good.

The first I will mention is the production of food and the tenure of land. I put these first, because we must eat before we live. We must come into the world, first, no doubt; but we manage somehow to do that. Having come into the world, we must live, and therefore I have put before all other subjects of Social Science the means of production and the tenure of land. The subject of the tenure of land is one which has occupied the attention of the greatest men in the world. We are all aware of the great discussions regarding the relative advantages of large and small tenures,

of large and small cultivations, of zemindaree and ryottee holdings ; we know that the complications of the tenures of land are enormous ; that the variety of these tenures are enormous ; that very hot contests have been held regarding the advantages and disadvantages of different tenures. That, I say, is a subject in regard to which this Association might well occupy itself. There are a great many questions in connection with this subject which it might well discuss,—the advantages of the different tenures, of the different systems of production, and the different modes of agriculture. They may not only promote these things, but also by full and free discussion encourage the landlords of this country, zemindars, to take an interest which they have not yet taken sufficiently in the science of agriculture and the productiveness of their estates. I hope that if these subjects become popular subjects, we shall find the zemindars doing more than they now do, cultivating home farms, and introducing improved modes of agriculture, tending to improve the condition of their tenantry. That is a great object which this Association might effect, influencing a very large proportion of influential zemindars of Bengal. Well, then, supposing the Association has by its efforts so increased the food products of the country that the people may live well, and supposing that they did not desire to go naked, I next assume that they must be clothed. Well, in regard to manufactures, we are by no means in the same stage as in regard to agriculture. Agriculture is one of the oldest arts in this country ; but manufactures are, in one sense, in their infancy. The old manufactures have passed away, but a new age is beginning. I firmly believe that a new age of manufactures of the very utmost importance is beginning in this country. We see around us great mills for the manufacture of jute and cotton fibres ; and, to my mind, there is no more interesting and hopeful sight than to see natives employed in these mills. It is the commencement of perhaps the greatest of modern problems, the commencement in this country of the problem of associated labour. The people of this country, standing alone as individuals, are a very industrious people, and far from an unskilful people. Although they want the means of agriculture which a Social Science Association may give them, still they are an industrious and skilful people standing alone in their own small way ; but when they come to labour for others, I fear they do not do the same amount of labour that they do for themselves, and they will not do it till some system of associated labour is introduced. Those who employ coolies or *malies* by the month, feel that they get a comparatively small amount of labour out of them ; but, on the other hand, we see in these mills a system of

organised and associated labour ; we see there natives of the humble classes performing work quite as good, as valuable and as true, as the best workmen of Great Britain. I say that in these mills you have a great engine of social science. A great many educated natives have taken great interest in the introduction of improved manufactures. I read with great pleasure the other day that two native gentlemen had started for England in order to accomplish themselves in the manufactures of Europe. I trust that a very large proportion of the educated men of Bengal will be interested in manufactures, and in connection with this Social Science Association develop great blessings to the country.

Well, then, Gentlemen, supposing that this Association has succeeded in the production of food to keep the people well fed, and in the production of good manufactures to clothe them, it follows that we should wish to keep the people so well provided for alive ; and in that view the great subject of sanitation becomes a most important one. That subject is one the importance of which has been well recognised ; but I am sorry to say that the success in promoting that subject has not been equal to the recognition of its importance. We all admit the need this country has for sanitation. This country is very deficient in the most ordinary sanitary appliances. I am far from saying that any of us can teach to this country a perfect sanitary science. I cannot but believe that sanitary science is all over the world in its early infancy. But I do say that this country is one in which that infant life can be nursed into maturity under the best circumstances, where the need is great, and where the opportunities of experiment are great, and the good to be effected is great. I say that if, by the influence of this Association, we can succeed in procuring for the towns and villages in this country a good supply of water ; I say that if we can succeed in diffusing the means of combating the terrible forms of disease which ravage the country ; and if we can influence the habits and the habitations and the dwellings of the people ; if we can promote their health and comfort,—a great work will have been worked equal to any in the world.

Then, in connection with this subject of sanitation is another subject which has occupied the attention of this Society during the past two years. I am alluding to the subject of emigration. There has been a suggestion that the people are unhealthy and ill-fed, because there are too many of them. I will not say that is a just view, and I will not say, on the other hand, that it is a pity to deprive ourselves of our population. But the subject of emigration is at this moment one of very great importance, in regard to which

the labours of the Society in discussing it and in coming to conclusions are of very vital importance to the people. Mr. Geoghegan was good enough to read a paper, at the last meeting, on the subject of emigration. He showed many most interesting facts. Since the scarcity which now presses upon us, that subject has become of more pressing importance. It is a subject which I venture to offer to the Society as one of pressing need, which this Society should discuss and deal with at the present time.

Putting aside the question of emigration, supposing we are to keep our people, and to do the best we can for them, next comes the subject of education, which has been recognised in all parts of the world as a very great branch of Social Science. I am sure that there is no one here who does not recognise it in this country as a subject of the most overwhelming importance. We know how many subjects there are which give rise to differences of opinion in respect to which there is great room for improvement. I am quite sure that this Society cannot occupy itself better than in discussing this subject, and in determining how far the cultivation of the sciences is likely to lead to a still greater development of the useful arts; in what form and manner education might be best communicated to the people; what classes of the people we shall educate; and in what way, and to what degree, we shall give them education. I will not attempt to go into the many branches into which this subject might be divided, but I am sure that it will afford an almost unbounded field for discussion by this Society.

Well, then, religion would scarcely be put as a subject of Social Science, but the social forms attached to religion, and the various forms which in various countries caste takes, are subjects of great importance, and may be properly discussed by a Social Science Association. Some people maintain that caste is the mere offspring of prejudice. It appears to me that the people of Bengal are fast coming to the belief that from a religious point of view caste has but little foundation. On the other hand, there are some people who maintain, and maintain with considerable show of reason, that castes are but hereditary divisions of labour. These subjects are of very immediate importance in this country, because this country is in a passing and transition stage, and upon the direction that opinions may take on this subject, much of the form of the future society of India is dependent. I believe that the future forms of society will be very much moulded by discussions in these social Societies regarding these subjects of caste and cognate matters of that kind.

Then we come to a subject which embraces all other subjects,

namely, the laws by which we are governed. That is a subject which has been taken up on several occasions in this Society; and, at a not very distant meeting, I had the pleasure of listening to the reading of a most admirable paper by the Hon'ble Mr. Justice Phear regarding the administration of justice in India. I am sure none of those who listened to that paper could have done so without feeling that they had learnt much; that the door to discussion and improvement had been opened.

The laws by which we are governed must always be a great subject for discussion by this Society. True, this Association cannot make laws, but I believe they may largely influence those by whom the laws are made and administered.

Even more important than the laws, by which we are governed, are the social institutions by which we govern ourselves. I have said that in this country political freedom is almost impossible; but in this country we have to a great extent a certain municipal freedom of our own. There are the old self-governing village communities which have prevailed over very great parts of India, and of which remains are found in Bengal. This is a subject which has also occupied the attention of this Association. The Revd. J. Long, than whom no man is more competent to give an opinion on this matter, read a paper in this Institution, in which he compared in an admirable and exhaustive manner the village communities of India and the village communities of Russia. This is a subject which opens a wide field of discussion, and seems of the most overwhelming interest. I think that no subject has created a greater amount of interest in the world than the constitution of these self-governing village communities of India. You are all aware that the greatest nations in the world, the greatest states in the world, have risen from village communities. It was so in Greece, and the States of Greece were originally nothing but village communities, which eventually developed into States, small no doubt, but intellectually the most powerful the world has ever seen. Rome was originally only a village, but it was a village which rose to govern the world. My belief is that if the people of this country were able to govern themselves in villages, they might succeed in governing themselves in larger things; and if this Association should succeed in showing the way to develop village institutions, they will go far towards preparing the country for political freedom. In fact, if these subjects are taken up as the work of the Association, in the order which I have mentioned; if we come to a successful development of this great subject of self-government, it may be, from being what I have called a Social Parliament, we may in the course of

time develop into a real Parliament with real powers ; it may be that our grandchildren may see a Bengali House of Commons sitting in this place, the legitimate successors of this Association. I have ventured to come down here not with anything worthy to say to you beyond this, that I hope we shall all together put our shoulders to the wheel, and do what we can to develope this Association ; to make it what I have called a Social Parliament ; to promote the progress of that Parliament, and to hasten the day when a Bengali House of Commons may take our place.

The Revd. KRISTINA MOHAN BANERJEA said : I beg to move the thanks of the meeting to His Honor the Lieutenant-Governor not only for having accepted the office of our President, but also for the very interesting and practical address which he has just now delivered. The cheers with which you greeted that address make my task all the more easy. It is not necessary for me to say much in commending this resolution to your acceptance. I know that it will meet with your hearty acceptance. But the points upon which His Honor has dwelt are points which are calculated to touch our hearts so nearly that it is impossible for me not to say that I heartily endorse his exhortation on all the topics, all the points to which His Honor has adverted. It is very true, gentlemen, that social freedom such as we possess, and a Social Science Association such as this, are just the things necessary and most proper for such a community as the mixed Anglo-Indian community of Calcutta. Here we have several communities differing in many important things, but in one sentiment they are all united ; that is, first of all, the sentiment of loyalty to the great Sovereign of the British Empire ; and, secondly, the desire of getting as far as our peculiar circumstances will allow something imparted to us of the civilization of that Great Empire. These feelings, I think, are universal in this country. Gentlemen, here we have in Calcutta, a European community an East Indian community, a Muhammadan community, a Hindu community, and a Native Christian community, all differing in many respects in religious sentiments, and in other things peculiar to their races. There may be also a great deal of rivalry between them. But in these two things they are all united--in the feeling of allegiance to Her Britannic Majesty, and in the desire of having imparted to them, as far as their circumstances will admit, the great civilization of the British Empire. We have heard the cry of " Eastward Ho !" but here the cry is " Westward Ho !" You have men burning with the desire of going to England and learning there. It may be that the desire is connected with the ambition of coming out as civil servants or barristers, or medical men. But all this proceeds from that other great desire of attaining the civilization of Great Britain. They see the great effects of that civilization in that country ; they see its effects developed in the character of the people ; they are desirous of partaking of that character, and of having that same civilization amongst themselves. They know they cannot have the whole of it ; they know the whole of it is not adapted to their circumstances and peculiarities of life. But so far as they are capable of having it, they have a greedy desire for it, and that we see manifested more and more every year. Now I say that an Association like this is just the place where all these differing elements of the great Anglo-Indian community, of the different races of which it is composed, can meet upon one common ground, and freely discuss those great questions which His Honor has so lucidly and so forcibly placed before us. Of course the time has not come for

anything like political freedom. Even as regards self-governing municipalities we have no signs of that desire in Calcutta. We see villages, and suburban places, endeavouring to govern themselves. But Calcutta is composed of so many jarring elements that it thinks its best advantage is to trust to the good disposition of the Government. And therefore I have never yet heard any one crying out for that freedom, that municipal freedom of the electoral franchise, which in the other presidencies there has been a cry for, as well as in some of our not distant small towns and stations. And I believe they are wise. I think you will see that Calcutta will not be able to govern itself with an electoral franchise so well as it is now governed. Of course, we know what battles are fought at municipal meetings; but those very jarring elements tend to purify the atmosphere, and produce good results. But the time may come, as His Honor has very well said, which all desire so fervently, when this Social Science Association may grow into the House of Commons of India. Of course that must be, as His Honor has said, at a very remote period. I cannot say with His Honor "in the days of our grandchildren," because I have now a grandchild in this room itself. He does not see it. But the grandchildren of some of us here may see it, and that of course would be a very great day for India, and that can only be by the development of that civilization and the increase of that education for which the British Government has been for so long a series of years especially noted and distinguished, and for which the natives of this country have shown themselves to be so well fitted. I move the thanks of the meeting to His Honor the Lieutenant-Governor of Bengal for having accepted the office of President, and also for the address which he has delivered to us, and I expect that it will be carried by acclamation.

Babu KESUB CHUNDER SEN said : I have been asked to say a few words before formally seconding the vote of thanks proposed to His Honor the Lieutenant-Governor by the reverend gentleman who has just sat down. It is perhaps the duty of a Social Science Congress, at the end of each session, to take a retrospective view of the course of recent social changes, and to gather such lessons from the past as may help to regulate its movements in the future. Much wisdom certainly may be found in the past. We all admit, and it has been acknowledged by the most eminent statesmen, that the cultivation of Social Science in India is beset with difficulties of an almost insurmountable character, and that it has made no appreciable progress. But what is this owing to, but to the fact that Social Science has never been properly studied here? Surely there is no lack of interesting materials. Are there not questions of vital importance which challenge our serious consideration? Are there not many subjects stirring up hourly around us which we ought to discuss fully in order that the people, and also our rulers, may be guided aright? India is indeed a peculiarly favorable field for the growth and development of sociology as a science. But the fact that this science is still in a crude state here, and has not made any degree of perceptible development as yet, is owing to the circumstance of our having neglected it. None, I believe, can question its utility or importance. Even social reformers, who are trying to carry out practical reforms and have often failed, are prepared to confess that, unless the constitution of native society is studied in a thoroughly scientific spirit, very little good can be achieved. Like all other sciences, Social Science requires nothing so much in its votaries to foster its growth as confidence and hope. The spirit of scepticism and despair kills science. It is evident that if the social phenomena which transpire among us daily produce a discouraging effect upon the mind, few could take any interest, speculative or practical, in sociology. There are men who feel that in

India everything is discouraging. Education has not made much progress. The people are idle, and will not help themselves. It is impossible for a foreign Government to place sufficient advantages before the people. It is impossible for philanthropic European gentlemen and ladies, with all the sincerity of their motives, with all their high character and zeal, to exercise a sufficiently ennobling influence upon the habits and manners of the people. All this has been said again and again by those who have learnt to take a gloomy view of things. But I should be excused for feeling and cherishing the most sanguine hopes in regard to the future of my country. Having had some degree of experience in the matter, I must say that all that we have seen, far from being calculated to depress us, tends to encourage us greatly. Many of the obstacles which for centuries stood in the way of social reform have been removed by the philanthropy of a generous Government. The abolition of suttee, the legalization of the remarriage of widows, the suppression of infanticide, and the recent Marriage Act, which has afforded facilities towards the consummation of marriages among natives of different races and castes at the proper age: all these are material and valuable helps rendered by our Government towards the social advancement of the country. These reforms make us feel, as nothing else can, that we live truly in a land of social freedom. The thorns in our path have been removed, and it has been made smooth, and we can walk straight towards our destination. What remains to be done must be done by ourselves. Government has done its work in an encouraging manner, and it can hardly do anything more. The more important part of the work devolves on our own shoulders. All social disabilities having been removed by a wise and generous Legislature, it becomes our duty to avail ourselves of the facilities and advantages we have thus secured, and to make such use of these facilities and advantages as will enable us to improve our homes and our social condition generally. The State has not only cleared the ground, but has also sown the seed of positive reform. Is not education making much progress? Schools are multiplying in all directions. The laying of the foundation stone of the Presidency College is a proof that the local Government is anxious, sincerely and earnestly anxious, about the education of the higher classes of the native community. And the liberal grant sanctioned by the Bengal Government towards the development of primary education amongst the masses, is also the best and surest guarantee we can possibly have that this matter will, in future, receive more earnest and generous attention at the hands of the Government. Thus, in regard to the education of the higher classes and the masses of the people, a great deal has been done by Government. The success of the Calcutta University also shows that there is in the native mind in all the strata of native society an ardent desire for knowledge and intellectual light. This is to be found even among native women. I have been surprised to find that there is such an earnest hankering after knowledge among our countrywomen. They have not had that share of public attention which they should have had; nor has Government hitherto done much for them. But I hope and trust that the time is coming when our countrywomen will receive at least that attention which our countrymen have received from Government. There is no doubt, however, that there is a true and sincere desire for knowledge among all classes of native society. You may doubt everything else, but you cannot doubt this, that the people are sincerely anxious to receive knowledge. Open a school anywhere, and hundreds will at once rush into it, in order to avail themselves of the benefits of education. What does this show but that the people are ready to accept the advantages which a paternal Government is so anxious to confer upon them? All this is

encouraging. It leads to the belief that our future is bright, not gloomy. With what zest and avidity must we apply ourselves to the study and practice of the principles of Social Science in a country, where we meet with such rich materials of thought and cheering indications of progress! In England, the Prime Minister and the highest functionaries of the State often condescend to deliver public addresses and lectures on scientific and social subjects, which greatly influence public opinion and help national progress. I am heartily gratified to find that His Honor the Lieutenant-Governor has come forward to tell us, in the same generous spirit, all that he thinks will conduce to our welfare. I trust that his noble example will be followed by others in high position. It is an encouraging fact that the rulers and the ruled are trying to come together, and are entering into more cordial relations with each other. Upon no fact can we congratulate ourselves more heartily than upon the close commingling of races which we have seen of late. A vast social gulf has kept the two races separate and distinct from each other for many long years. Many philanthropists have been attempting to bridge this gulf. Lately we have seen not a few influential Europeans engaged in cultivating social intercourse with native gentlemen in a most friendly spirit. What Professor Max Muller has lately said with reference to creeds and religions applies with full force to nationalities and races. The very presence of Englishmen in India is, I believe, a source of wisdom, wealth and happiness to us. Only place these two races together in juxtaposition, and they influence each other for their mutual good. Their mutual contact, even where there is no direct effort at reform, must lead to the improvement of both races. The European residents in India may not display anything in the shape of aggressive activity; let them only dwell amongst us by their examples; that is enough. They will transfuse their spirit of progress and refinement into the native heart, and it will produce all those reforms which we need at the present moment. His Honor the Lieutenant-Governor has kindly paid us a very high compliment. The Bengalis have been characterised as the Athenians of India. I hope we shall do all in our power to deserve the compliment. But do we not feel that we are sadly deficient in that energy which is so eminently characteristic of Scotchmen, and which His Honor has always displayed in so striking a manner? We do want Scotch energy. Without energy our boasted freedom and boasted enlightenment will produce very little tangible result. We have been always preaching reforms, but we have not yet learnt to give effect to them in practice. May we have a little more of that Scotch element which Bengal especially, and all India, needs. It is to be hoped that this Association will not only study sociology as a science, but also go beyond the province of mere theories and half-hearted assumptions, in order to lend practical aid to the people who look up to it for light and guidance. As a theorising body, the Bengal Social Science Association will do very little real good to this country. There is much to be gained certainly in discussing political and social matters—such as law, commerce, emigration, sanitation, education, manufactures, marriage, caste. All these are subjects which ought to be properly studied. But shall we study them simply that we may gather knowledge and add to our stock of information? Will statistics raise us in the scale of nations? Will scientific enlightenment make up for the defects of character? Let the honesty of our deliberations and the accuracy of our inferences be of an unimpeachable character. Yet a great deal will remain to be done. Unless we are determined to act with energy, and give effect to the principles of social science, we shall never improve our individual or national character. Before resuming my seat, I beg heartily to support the proposition of offering our best and most cordial

thanks to His Honor the Lieutenant-Governor for his excellent and edifying address.

HIS HONOR THE PRESIDENT said : I am sure I must thank very heartily the gentlemen who have been good enough to propose this motion in such flattering terms. Ladies and gentlemen, I wish to explain that in saying that this Association should do more than it has yet done, I am very far from supposing that it is in my humble power to promote in any material degree that result. I feel that as President I am not likely to do much more than open the session at this meeting. But if my active exertions may be defective, it may be that I have not many opportunities of actively promoting the good work you have begun, though I can say this that my best wishes will always go with you, and I shall look to the success and progress of this Association as one in which my feelings and hopes are bound up. I will say no more about myself, but will ask you to pass a vote of thanks to one who has gone through labors much more arduous, difficult, and severe than any I am now undertaking—I mean the retiring President, Dr. Ewart. For two years Dr. Ewart has fought the battle and has undertaken a work which, I feel, has been well described by the gentleman who spoke last, as a work which is weighted with many difficulties. With the greatest boldness, skill, energy and perseverance, he has upheld the Society, and maintained the life of this Society. To Dr. Ewart we are immensely indebted for his work during the past two years, and I am sure you will join with me in passing a very hearty vote of thanks to the retiring President.

Dr. EWART said : I feel deeply indebted to Sir George Campbell for the very flattering terms in which he has proposed a vote of thanks to me for the small services which it has been my privilege to render to this Association, and also to you, ladies and gentlemen, for the handsome way in which you have so kindly received the proposal. I only wish I had had more leisure to render these services more practically useful than they have been. Without the assistance of the Council, and without the assistance of the Secretaries to the Council, my labours would have been of little avail. To Baboo Peary Chand Mittra and Baboo Nilmony Dey, the chief credit is, I feel perfectly satisfied, due for doing the largest proportion of the work connected with the Association, and I feel that I should be taking a great deal more credit to myself than I deserve, were I not to bring their valuable names prominently to notice on the present occasion. They have given me, at all times, most material help in conducting the business of this very important Association.

ADDRESS

BY THE

HON'BLE SIR RICHARD TEMPLE,

PRESIDENT OF THE ASSOCIATION.

[Delivered on the 23rd February 1876.]

LADIES AND GENTLEMEN,—It now devolves upon me to make the address which has been announced to you as to be made by me. The subject—social science—which I have to treat of is so vast and comprehensive, and would demand, if properly treated, such a degree of wisdom, knowledge, and eloquence, that I cannot undertake the task which I am now fulfilling with any sort of confidence. I have read with great interest the various addresses made to you by my predecessors in the post which I am occupying at this moment. I have also looked through the many interesting papers which have been presented to you upon various occasions upon many topics. But now that the proceedings of this Association have been for some time suspended, it seems to me desirable to present to you a sketch of the subjects to which it appears to me the attention of the Association should be directed. Now, I understand that this is an Association for investigating the condition of the people of these provinces. By these provinces I mean Bengal, Behar and Orissa. My remarks, then, will relate solely to the people of those provinces I have just mentioned. And if my remarks shall appear cursory, you must kindly bear in mind the great number of topics of which I have to treat, and the very limited space in respect of time which may be allotted for the treatment of any topic.

Well, then, I will divide the subject into two main parts. *Firstly*, the materials which exist for the work of the Association ; *secondly*, the objects to which that work should be directed.

As regards the materials for the work of the Association, I must first of all remind you that the collection of statistics is the mainstay, literally the very backbone, of the knowledge with which the Association has to conduct its operations. There exists frequently a prejudice against statistics and the collection of dry figures, but nevertheless you may depend upon it that without the collection and collation of figures of this kind it will be impossible for an Association of this description to work. But what is really wanted, besides the collection of figures, is an intelligent appreciation of them. Figures are often so repulsive to the ordinary mind that they pass almost without being heeded, notwithstanding that they are the basis of all our knowledge. Well, then, for the correct and intelligent appreciation of figures an Association of this kind is peculiarly useful. It is when you have the minds of many persons with a purely unselfish interest in the subject, and a fair love of the study, and a firm regard for the welfare of their fellow-creatures—I say it is when you have the thoughts of these persons directed to the understanding of the figures—that really valuable results are attained, and therefore it is that the work of such an Association as this is so peculiarly welcome to all who are interested in the welfare of the country.

Now, I may remind you that of late the collection of statistics has made great progress in Bengal within the present generation of officials. As official life is short in this country, the period of time occupied by one generation of officials is rather brief perhaps. But I may say this, that within that short period a department of statistics has been formed as a regular portion of the Government. A statistical journal has been started. External trade returns have always been good for some years past, although the registration of internal traffic has been defective. Nevertheless, that also has been remedied recently, and in a very few months we shall have accurate registration of all the internal trade of these provinces, and especially that unsurpassed traffic on the rivers of Bengal—indeed, as we know, the river traffic of Bengal is in its way hardly equalled in any country in the world.

As regards agricultural statistics, we must admit that in the absence of field surveys we are deficient in that which is the only true and sound basis of this particular kind of statistics. I fear that, looking to the circumstances of the country, especially in relation to the permanent settlement, a field survey is a thing which we

shall never have. That is greatly to be regretted, as it places us in a disadvantageous position relatively to all the other provinces of British India. As you probably know, other provinces have field surveys; we are without that advantage, which we can never hope to enjoy. In Orissa perhaps we shall have a field survey, and possibly also in Behar, but in Bengal there is no prospect of it. That being the case, there is nothing for it but to trust to special inquiries which may be made in particular parts or in any selected areas. Such inquiries have been made in Jessore, Rungpore, Beerbhoom, and Shahabad. I think I see one of our excellent members present, on this occasion who bore a distinguished part in some of those inquiries.

Then the operations for the valuation and assessment of the road cess have thrown a flood of light upon all the tenures of land, from the humblest to the highest. There is now, as you are aware, a Bill before the local legislature for the registration of possessory titles in land; that also will be ultimately of great statistical value. There are vital statistics being prepared for all parts of the country, but it must be admitted that such statistics, when collected simultaneously over vast areas, such as the areas of these provinces, are apt to be defective at first; nevertheless, they also should be specially compared, tested, and collated for selected areas. We hope that to some extent they may be depended upon; and in several instances they have brought out very striking and startling results. The various departments of the Government are year after year publishing a mass of important figures. These, I am afraid, are seldom looked at save by those immediately concerned. If this Association, or the members of it, will constantly study these figures with a really intelligent eye, I am sure that important results will be obtained from such insight.

Recently a reference has been made to the Government of Bengal from England regarding a proposal of Dr. Forbes Waston for making industrial surveys in these provinces. We have replied that we shall be happy to place in communication with Dr. Forbes Waston the most competent committee which we have, namely, that of the Economic Museum of Calcutta. That museum, which was established by my distinguished predecessor, has been steadily maintained. It now possesses a vast number of specimens of all the varied products and produce of Bengal. It has a most learned and diligent committee in charge of it, which committee again is in communication with district committees for economic purposes all over the country. It is hoped that the results of the labours of the committee of the Economic Museum, upon being communicated to

Dr. Forbes Waston, will be compared with similar information from all parts of India, and we shall thus gradually obtain a mass of valuable information for all useful and practical purposes.

So I think I may say that, looking to all these materials—the statistical department of the Government, the statistical journal, the external trade returns, the registration of internal traffic, the special agricultural inquiries which may be made in various districts in continuation of those inquiries which have been already made, the returns of the road cess, the registration of possessory titles, the vital statistics, the information obtained by the Economic Museum committee in communication with Dr. Forbes Waston—taking all these various sources of information together, I may say that a considerable amount exists of statistical materials upon which this Association might work.

So I will pass to the second of the two parts into which I propose to divide the subject, namely, the objects to which the work of the Association should be directed. Now, I understand that our thoughts are directed to social science, by which I understand knowledge relating to the progress of society generally and of individual men, also of each individual man in his relations to society. That really is so vast, interesting, and magnificent a subject, that one hesitates to treat it; but that is, I understand, the real subject to which all our thoughts are directed at this moment, with special reference to the people of Bengal. It is a subject which of course is ever foremost and uppermost in my own thoughts while I occupy my present position, and I presume it is of supreme importance to the great majority of my present hearers.

Well, then, as regards the people, we must remember that the motive power which moves this human world is human energy, which is to all forces on the earth what steam power is to machinery—what the main spring is to the watch. Well, now, human energy, I conceive, is promoted by two great sets of causes; one set relating to climatic and physical considerations, and the other set relating to social and moral considerations. As regards social and moral considerations, whatever system of Government or of society stimulates and evokes human zeal and energy must be pronounced successful, and whatever deadens or depresses such zeal and energy must be pronounced unsuccessful.

Now let us consider the condition of the people of Bengal in reference to these considerations. As regards climatic causes, it must be admitted that the climate of our provinces is somewhat too equable and too easy, and for that reason rather militates against the sustaining of a first-rate degree of energy. That we must ad-

mit at once as a great natural disadvantage : perhaps we may succeed in making up for it socially. No doubt many of you have read a book, Buckle's History of Civilization, which clearly shows that climate has an immense effect on human character ; and I am sure that if any of you have travelled over Northern India you will see that, with their extremes of cold and frost on the one hand and burning heat on the other, the people there are a taller and stronger race of men than they are in these perhaps more favoured provinces. Further, the great effect of physical causes may be apparent if you consider some of the salient circumstances of these provinces. Take Eastern Bengal. You know what a great revolution has lately occurred there in prices. You know what disputes arise between the different classes as to the division of the profits of the land, what an independent spirit has arisen amongst the peasantry, almost provoking agrarian disturbances ; and what is really at the bottom of all this ? Why, the fact that a particular plant called jute (the *corchorus capsularis* of botanists) has proved to be remarkably suitable to the soil of several districts. You see what a great deal jute has to answer for as regards the progress of society. Now, if you consider the remarkable manner in which the people of Orissa have recovered from the consequences of that dreadful famine—not only recovered, but probably in a much superior position socially to any that they before occupied ; if you consider the very independent spirit which is growing up amongst the peasantry, the intelligence which has been fostered among the people themselves, you will find that it all arises from the fact that certain canals have been undertaken, and that a certain amount of excavation of earth has been effected and a certain amount of water let in ; that is, the physical circumstances of canals become the motive cause of all the improvements in Orissa. Then, again, if you look at the Darjeeling district and see the hill-sides covered with bright houses and gardens, with machinery showing itself in that strange and very remote locality, and the race of the Nepalese or Indo-Aryans gradually elbowing out the aboriginal races, Bhootas, Lepchas and others, what is the cause ? Why, the physical fact that the tea plant has been naturalized in the lower slopes of the Himalayas. In the same way, what is the cause of the great progress of Beerbhoom and Raneegeunge and the border land between Sonthalia and Chutia Nagpur ? Why, the simple fact that coal and iron mines have been discovered there. Consider, again, for a moment what would be the effect if in Northern Bengal some means were found of curing tobacco in a manner which shall cause our leaf to compete with that grown in the West Indies ? The social effect of that in that part

of the country would be immense. Again, great as may be the effect of railways in the promotion of trade and the augmentation of wealth, the effect upon the character of the people is greater still, teaching them to run to and fro on the earth, to travel, to mix with one another, to overcome caste prejudices, accustoming them to the sight of mechanical works ;—why the moral effect of railways is greater than the material. Similarly, in a very few years you will see immense social changes in Northern Bengal, in Dinagepore, and also I earnestly hope in Northern Behar, which latter is about the most backward province, considering all its advantages, which I have ever seen in India. Even there you will see in a few years immense progress, moral and social progress, in the condition of the people, which will arise from the fact of some irrigation works being executed and some branch railways being constructed. So much for physical causes, on which I might enlarge much more if time permitted.

Then we come to social and moral causes. It appears to me that this portion of the subject may properly be divided into four parts. First, if you consider that if a man is really to advance in his social condition, he must have a reasonable degree of security for life ; secondly, he must have the sense of possessing rights and the certainty of enjoying the fruits of his industry ; thirdly, he must have a fair chance of improving his mental culture ; fourthly, he must have an open field for exercising his functions as a member of the body social and the body politic. Now, I will ask your attention to a few brief observations in reference to Bengal on each one of these points—these four points into which I divide the social and moral aspect of the question.

Now, as regards a reasonable degree of security for life. We are of course, it must be remembered, free from those devastating wars and revolutions which have so greatly affected the people in most parts of India. We may also hope that we are living in a place which has been kept free from the horrors of devastating famines. There are some persons, I am sorry to say, who seem to regard famines as necessary evils, which are sent by Providence in its wisdom to decimate mankind and relieve the land of its surplus population. Now, without going too much into statistics or the economic aspects of that question, I must point out that in our Christian Bible we are enjoined to give meat to the hungry, drink to the thirsty, and to clothe the naked. We are commanded to do that to the very least of God's creatures, and we are told that when we do so, we do it to Him. I am sure that this command will commend itself to all mankind, to the consciences of all, whether Chris-

tians or not. But, remember that we as Christians believe these are the words of God himself, and therefore you may be sure, that a Christian Government will with its very best efforts, and to the very utmost of its resources, save human life from starvation. Suppose a nation is involved in war or some other great political emergency, it will fight to the very utmost of its power, and though beaten there is no doubt as to the extremity of the efforts made. So with regard to the preservation of human life from misery and starvation, you may be sure that the Government never will remit any exertion that can possibly be put forth. The other great cause of checking population is disease. Now sanitary measures form a subject peculiarly suited for the cognizance of this Association. Take, for instance, the disease of small-pox, which has possibly done more to destroy life than any other cause. It is a matter in which the native gentlemen belonging to this Association may render great service by explaining to their less informed fellow countrymen the benefits of vaccination. Consider the importance of stopping inoculation and thus turning all the professional inoculators into vaccinators. If that can be done with the co-operation of the native gentry throughout Bengal, consider what immense advantage would be gained. Another great scourge of mankind in these provinces is the fever—various types of fever which are constantly visiting even the most highly populated and best cultivated parts of the country. Here, again, also consider what an immense field there is for exertion in respect of drainage. The real cause of the fever in Bengal is damp—the excessive damp which arises in the autumn after the cessation of the rains—and the exhalations which arise when the sun of the autumn breaks out in its full effulgence. The vital statistics have sometimes shown an appalling mortality from this cause even in such places as the suburbs of Calcutta. Well, there are, you may depend upon it, literally hundreds of square miles—I speak after a certain investigation of the subject—of fever-producing swamps which might by good drainage be converted into smiling fields full of every sort of produce; and in fact the very ground from which this fever is exhaled for the destruction of life might be made to yield crops for the sustenance of life. But for this the co-operation of the numerous gentlemen intimately connected with the land is necessary. Here also is a matter in which our Association may do great service by enlightening public opinion. Then there is a cheap febrifuge being invented by the cultivation of various sorts of cinchona in our Darjeeling hills, the object being to provide an inexpensive remedy, of which the cost should be within the reach of the means of most of the poorest classes of

the people. Impurity of the drinking water in the villages is another fruitful source of disease. If the Association could help in investigating that matter, it would do great service. Anything like a chemical analysis of most of the village tanks in Bengal would yield results which would quite horrify us if we could only know. I believe that this evil is being partly remedied year after year by the construction of additional tanks by benevolent and public-spirited landholders. But still, depend upon it, one of the crying wants of the country is the improvement of drinking water in the villages.

Next, medical education is a subject extremely well suited for the consideration of the Association. Hundreds of young Bengalees are being trained annually as surgeons and doctors. I believe that in many places they are superseding the old native practitioners; and at all events, even if European medicine has not altogether superseded native medicine, there can be no doubt that European surgery is rising yearly in the estimation of the people. It may be hardly known to most of the gentlemen here the many thousands of surgical cases which are being successfully treated year after year at the various dispensaries in these provinces. I think the number is between 30,000 and 40,000 in a year. That will give you some idea of the great efforts which are being made everywhere to preserve life. Similarly, the statistics of charitable dispensaries in the interior of the country are yielding results of great interest, well worthy of the notice of such an Association as this.

This leads me next to consider the incidence of the population on the land. No doubt there was for a long time a prejudice against the taking of a census in Bengal. That prejudice, I hope, has been overcome for ever. You may depend upon it that the counting of the population, the possession of a correct idea as to the number of people entrusted to our care by Providence, is the very first duty of a civilized Government. Without a good census it is simply impossible to form any trustworthy conclusions on any of the great subjects pertaining to civil government. And if you cannot take a census in the country, you had better not undertake to manage the country at all. At any rate, that great disadvantage, namely the want of a census, has been overcome, and we now possess a tolerably good return of the population. It is deeply to be regretted that a census was not taken a century ago; for we are still without any correct data for judging whether there is really an increase in the population or not. I can hardly imagine anything more important for us as a Government to know than this. Yet we cannot say for certain what is the true state of the case.

The population has turned out to be so great, so much greater than was anticipated, that many persons are beginning to assume that the number has vastly increased under British rule. They are drawing gloomy anticipations for the future if the population is to go on increasing and to become more and more dense upon the land. But really we do not know that the population has increased so very much, because we have no census for previous periods. In some places, where we have anything approaching to information regarding the ancient or former numbers of the people in various parts of the province, it is remarkable that there is no apparent increase. Many years ago there was a celebrated Dr. Buchanan who took a correct account of the villages and houses in North Bengal, computing therefrom the number of the people. It is remarkable that the census of to-day does not show any increase of population there, rather the contrary. It is possible that, looking to the great remains, some Hindu, some Mahomedan,—looking to the great works of which we still see traces all over North Bengal,—it is probable that in the early days there was a greater population in those places than there is now. Again, in Eastern Bengal, dense as the population may be in the pergunnah of Bikraimpore—a name so familiar to the Hindu population of Bengal—I doubt whether it is denser now than in the days of those great Hindu princes whose names we do not know, but traces of whose works astonish every visitor. Again, if you consider the remains of temples and monasteries all over Gya, and the account which the Chinese pilgrims give of the condition of these wonderful institutions some centuries back, I doubt whether the population of Gya is greater now than in the days of Buddha. In the same way as to Orissa. If you look at the magnificence of the temples and other monuments erected there; if you look at the great Black Pagoda on the seashore; if you consider what great national resources are required to construct such buildings, it is probable that there must have been a denser population then than there is now. And so on from place to place. No doubt the population must have increased greatly in our immediate neighbourhood (I mean Calcutta), in the districts known as Jessore, the Twenty-four Pergunnahs, and parts of the Sunderbuns. Even in the Sunderbuns there are remains which show that where there is now nothing but jungle and wild beasts, there were once not only habitations, but structures of some architectural merit. It is important to go on taking fresh enumerations from time to time. Of course a census can only be undertaken after a certain lapse of years; still it is very important to lose no opportunity of taking revised censuses here and there, so as to see

whether the results show that the population is greater than at the time of taking the general census.

As regards the pressure of the population on the land, there are many persons who believe that the population is becoming so dense that the land cannot possibly grow food enough for the people who dwell upon it. From this point of view it becomes peculiarly interesting for the Association to consider the density of the population in different parts of the country, with the view of the encouragement of emigration, bearing always in mind that there is no poor law in the country—a most remarkable circumstance. What is done by means of a poor law machinery in other countries is in this country done by the generosity of private persons. I must say that this disposition to afford alms is to be acknowledged as one of the most estimable features in the character of the people of this country: it is indeed most creditable that such a vast amount of private charity should be dispensed in every village, almost without exception, throughout the country. Nevertheless, emigration is one of those subjects to which the attention of this Association should be directed. It may be doubted indeed whether the population of the country is too great for the total amount of its production, but still nevertheless there is no doubt that in many places it is too dense for prosperity. Thus emigration either to foreign countries, to the West Indies, to South Africa, to the Mauritius, or to British Burma, will be beneficial both to those who go and to those who stay.

Nevertheless, it is well known to most of my audience that the people are extraordinarily attached to their homes, and I think would rather suffer poverty and privation in their own villages than go abroad to seek employment and plenty and comfort there. Nevertheless, it will be apparent that emigration is most desirable for the over-populated provinces of the country. It is a subject peculiarly worthy of the attention of the many influential native gentlemen who compose this Association. They may exhort their fellow countrymen, and explain to them the vast benefits which have been derived by literally tens of thousands of emigrants who have left these shores, and explain to them how new fields are springing up in Burma, in the Mauritius, in various tropical and sub-tropical dominions of the Queen of England. Then, again, it is remarkable that though people are unwilling to emigrate to a foreign country for a permanency, they are greatly addicted to emigrate for short periods, and to districts not far from their homes. Literally, hundreds of thousands of persons emigrate every year for four or five months to distances varying from fifty to a hundred miles, and it is remarkable that they never stay in the places to

which they temporarily emigrate. No doubt one great reason is that they have no means—no capital with which to set themselves up in the places to which they emigrate for the time. So again this is a matter well worthy the consideration of the great landlord class. What a pity it is that capital cannot be found, only small amounts, to enable those people to cultivate the great extent of waste lands which exist in so many parts of these provinces. It is supposed that Bengal is over-populous. Why, there are few parts of the country where there are not many square miles of virgin soil awaiting the invasion of the plough. In Behar, in Northern Bengal, in Southern Bengal, almost everywhere, except Eastern and Central Bengal, these waste lands are sufficiently extensive to sustain some additional millions of people, and it is much to be regretted that so little is done to encourage settlers to colonize these areas. It is almost fruitless, many persons think, to encourage people to go to countries beyond the seas when they can find so much land near at home. It is to be hoped, indeed, that Government will itself set a good example in this respect by endeavouring to induce the people to settle in those rich submontane tracts which were taken from the Deb Rajah of Blutan after the last war.

There are also two or three thousand square miles of splendid savannah and jungle just beginning to be cultivated with tea, which, if properly settled down with persons, to whom small grants of capital might be made, would sustain hundreds of thousands of people who are now only helping to aggravate the superabundant density of the population in some of the more favoured districts. The Sunderbuns, too, offer a great field for colonization and cultivation, but not so great as is commonly supposed; because if all the Sunderbuns were to become cultivated, there would be a great deficiency of fuel. It is in these deltaic tracts that the *soondari* forests are grown from which the country craft of Eastern Bengal are made. If we once lose our *soondari* forests, we shall have no means of keeping up the many tens of thousands of country boats of various sorts which are required for the river traffic of these provinces, and that must remind us always of the great importance of preserving our forests.

Well, then, in connection with this subject there is the question of food-supply. The average consumption of each sort of country grain per head of the population is a matter of which very little is yet known, and is well worthy of the consideration of this Association. There is the aggregate probable quantity which is produced in the whole country, a matter also worthy of investigation; also the quantity of surplus grain which is either exported or

stored in the country. Then, again, there is the consideration of the non-edible products, some of which are increasing, such as oil-seeds, fibres and dyes, and others which are decreasing, such as indigo and mulberry. All this has a practical bearing upon the food-supply of the country, which is again intimately connected with the preservation of the life and health of this great population.

Such, then, are some of the considerations relating to the first of the four subdivisions regarding the preservation of life.

We come then to the next subdivision, which is this, the sense of possessing rights and the certainty of enjoying the fruits of industry. Now the first, the fundamental matter in relation to this subject, is the framing of good laws. I need not dwell upon that, except merely to observe that the effect of laws in a country like this depends upon the vigour with which they are administered. We know that some years ago there was great insecurity to life and property in Bengal, notwithstanding that the people were under the very shadow of the courts of justice. But it is no satisfaction to a man to know that there are laws for his protection if his house may be burnt over his head ; if dacoits are to break into his household at night ; if his crops are to be divided before they leave the field ; if the very growth of his harvest is to be watched, and he has to reap under supervision. So in connection with this we must consider the restraint of criminal tribes, which are numerous in this country, and regarding which we hope to introduce much more stringent laws than those now prevailing. Then there is the supervision of bad characters, who are a great deal too numerous in the country. There is the reformation of prisoners within the jails—a subject which you have heard so recently dwelt upon by Miss Carpenter. There is also the reformation of juvenile offenders, and above all things there is the due organization of the village police. I will not trouble you with any remarks upon the regular police, though that is a subject which I have no doubt will engage the attention of the Association ; but I will merely remark that of all things the most important to the peace of the interior of the country is the village police. They have been very imperfectly organized as yet, but we are now endeavouring to put laws into force which shall ensure their being properly paid, and consequently being much more efficient than they have hitherto been.

Then there is the consideration of various kinds of crimes, some professional and others not exactly professional, the professional kinds of crime being so much more dangerous than any other.

Under this head, too, come the tenures of land ; and in this respect the returns of the road cess, the registration of assurances,

the registration of possessory titles in land, become peculiarly valuable. There is a great tendency, as you know, to the subdivision of land. The law of partition is undergoing great simplification, and there is every reason to apprehend that the land will become more and more subdivided. That may have considerable advantages, but it has also its disadvantages, in that it is rather adverse to the application of capital to the land. Then there is that subject which is called 'subinfeudation,' a word which is becoming very prevalent in this part of the country. Well, this subinfeudation is going on—that is to say, a leasing and subleasing, and sub-subleasing in even four, five, and six degrees—and is becoming very common throughout the country, and is well worthy of consideration. It has its advantages, in that it causes a great proportion of the people to possess interests in the land, which circumstance has a steadying effect upon the general tone and feeling of the country. On the other hand, it does tend to prevent the application of capital to land. It is not very good for the cultivators, and it does probably conduce to render the upper classes of those interested in the land less energetic, less immediately concerned with the interests connected with their lands; and this to some extent does tend to depress and deaden their energies.

Then there is that most interesting matter which relates to the growth of tenant-right. There are few points upon which so great an improvement has been effected within the last few years as that relating to tenant-right.

Also there is the subject of rent-rates, as to whether they are increasing or not, the extent to which they do increase, and the difference between the rent-rates in the several parts of the country. You will find these differences very great.

Then there is the subject of the selling and letting value of land, a matter which serves most forcibly to indicate the progress of the country. Connected with this heading there is the subject of manufactures. You are well aware that the old manufactures of the country are deteriorating; but, on the other hand, new manufactures are springing up, especially those which are under European supervision and are conducted with European machinery. The machinery, no doubt, will continue to increase more and more, and it is to be hoped that by degrees, or rather, I may say, rapidly, the natives will become, by technical education, fitted to undertake the supervision of these factories. The extent to which factories are springing up will be strikingly apparent to any one who will ascend to any eminence in or near Calcutta, where the chimneys to be seen both on this side of the river and the other almost remind one of scenes in many

parts of Europe. All that is a great indication of a movement going on in respect to the industries of the country.

Another subject for your consideration would be the changes in the articles of daily use among the people. Consider the importation of metals and the substitution of brass utensils for the earthen and pottery ware of former times. Consider also the change that has taken place in the clothing of the people, and how even most of the native gentlemen in this room are clothed really in English-made fabrics; how even what are called the middle kind of fabrics in England are gradually making their way among the people; and further, that there are at this moment factories established in great numbers at Bombay, and beginning to be established in Bengal, for the making of the coarser fabrics of the clothing of the people.

Under this head, as I consider, would come the consideration of civil justice—a subject a great deal too vast to be dealt with at this moment, but still one of so much importance that I must touch upon it briefly. The great point as regards the progress of the people, morally and socially, is that there should be public confidence in the tribunals of civil justice. Now I think I am bearing testimony which will be accepted by you all, when I say that in that respect there has been an immense improvement of late years in Bengal—that is, in respect to the confidence which the people feel in the tribunals of civil justice.

Then, the character of litigation is well worth the constant investigation of an Association like this. The simple character of the litigation perhaps would not render such investigation very difficult. You would find that it relates either to the transfer of land, to rent, or to money lending.

Then there are the rates of interest on private loans, which we may hope will become less and less with the progress of society; and the considerations relating to the indebtedness of various classes, especially of the ryots. In some parts of the country you would find, on inquiry, that this indebtedness is decreasing in a most satisfactory manner, though of course, as we all know, there is still a great deal too much of it in most parts. The returns of the registration of assurances would also throw great light upon the points which I have just mentioned. This registration is well worthy of your consideration, because it has probably done more to prevent fraud and to render true and honest the transactions between man and man than any other measure that has been adopted.

Then there is the history of the progress of different kinds of value, prices of food, rates of wages, &c., which are becoming gener-

ally, though not universally, higher, and there are also the various monetary transactions which are sure to follow upon the increase of savings and the accumulation of money, such as savings-banks and money-order offices. Also there is the circulation of money by notes, proving the confidence of the people in the credit of the Government, and I hope before long we shall add to these considerations the matter of life insurance by Government for the benefit of those who choose to resort to it.

I might of course under this subject touch upon the public revenue and the public finances, and you will readily see that these are all matters which greatly illustrate the condition of the people; but time forbids my doing more than merely referring to them.

I thus come to the third subdivision, which has been stated as this, that a man must have a fair chance of improving his mental culture. That of course opens up the great subject of national education. There is sometimes a prejudice against primary education. People are inclined to say that husbandmen and artisans, and poor people generally, do not want knowledge; that it only renders them discontented with their lot, and perhaps envious of those who are socially above them. I need hardly say, in the presence of so enlightened an Association as this, that a greater error cannot possibly be propounded. It is knowledge really that sweetens toil and makes labour efficient, and one of the most supremely important matters in the present state of the country is the advance of primary education in such a manner as that it shall, if possible, begin to reach, and continue to reach, more and more effectively, the very poorest and humblest classes.

Another point relates to female education—a matter peculiarly pertaining to the functions and enquiries of such an Association as this. I am afraid I must say that at present such education seems more likely to make larger way among the humbler classes than the higher. It is probable that in the primary schools there will before long be classes for girls almost as numerous as the classes for boys; but I fear that it is generally held by the best informed authorities in the metropolis that education is not making such rapid strides among the zenanas of the upper classes. So far, however, as I can learn from the numerous native gentlemen of my acquaintance, I think that even among the upper classes female education is making great progress, but still it is evidently not making the same progress, as it is among the boys. There is also a great want of native school-mistresses, and that is a matter in which this Association may render itself peculiarly useful, in trying to explain to native women that the profession of a school-mistress is esteem-

ed and honoured most highly among all the most civilized nations of the world. There is, as you know, extreme difficulty in establishing normal schools, because of the great prejudice on the part of native women to appear in public, and unless that prejudice can be overcome there will be great difficulty in establishing those schools for training school-mistresses, and without a large staff of school-mistresses all over the country there cannot be a good system of female education.

Well, then, there is the great subject of technical education, which I venture to think is one of the burning questions of the moment. If you consider the factories which have been established; the mines of coal and minerals which are being excavated in many parts of the country; the forests which are being preserved under a system of scientific forestry; the public gardens which are being established; the surveys which are undertaken; the vast number and variety of the public works which demand special training in civil engineering; the great field there is for the art of engraving, for lithography, and for the various kinds of artistically skilled labour, you will see what an immense opening there is for those young men who shall choose to train themselves by technical instruction.

The fourth subdivision of my subject sets forth that there should be an open field for every man to exercise functions as a member of the body social and the body politic.

Now, of course, there are disadvantages to which any people must be subject who live under a foreign domination. Speaking as I am to my native fellow subjects, there is no disguising that fact. Still I venture to think that as the people of Bengal happen to have come under the rule of the very nation of all others, or at least the very nation of all European nations, which is the most free, and compared to which there is one nation only, namely America, which can be mentioned as a really free nation, I venture to think it may be expected that everything that is possible will be done to develop the means which the people may have for learning something in the art of self-government. You may constantly observe that there is more and more of a tendency to make everything local, on the principle that the people should settle what should be done in the way of local improvements, and raise local funds and administer them.

Well, now, among the means of such administration must be placed foremost the municipal institutions, both at the main centres and in the interior of the country. Whatever may have been the doubts regarding my distinguished predecessor's Bill for the estab-

lishment of municipalities all over Bengal, it had this advantage that it did endeavour to give something like municipal life to the people of the interior.

In connection with the subject of municipal life, there is the elective system, of which we hear so much now. I am sure that it has this great advantage, that it will teach the people to take an interest in their own affairs and to value the elective franchise.

Consider, then, the many opportunities which the people of this country have of gradually learning to manage their own affairs. I would mention that under the existing laws they may take part in the assessment of the dues of the people to the village police; they may take part in administering the funds raised from the road cess; they may be concerned in the management of all the schools in their districts; they may manage all the dispensaries, and also the economic museums in the interior of the country; they may be honorary magistrates. Nor is the honorary magistracy confined to one class; on the contrary it is open to men of all classes, whether they are connected with the land or trade, or whatever they may be, so long as they are personally worthy. Also a man has such occasional duties as those connected with the office of a jurymen, an assessor or an arbitrator. If, again, there is to be anything like an extensive system of drainage all over the country, that can only be done by the combination of the landholders themselves. And as a crown to this part of the social edifice, a man may become a member of the local legislature, and local legislation is certainly one of the most effective systems of teaching the people to take an interest in framing the laws under which they live. So that if you consider all the functions which a man may exercise under our existing system, you will see that he may find his time extremely well occupied. Any influential landholder or merchant, or private gentleman, may be a member of the road cess committee, of the dispensary committee, of the economic museum committee; he may be a municipal commissioner, an honorary magistrate, a member of the local legislature: and if he is all these things, I venture to say that he will find his time amply occupied in promoting the public interest, and will have a large scope for his legitimate ambition.

It is in connection with this subject that you may watch the growth of the various native associations. There is hardly a district in which there is not an association, a society, or a club (as they are sometimes called) for the promotion of some municipal or educational object. The growth of these associations, the numbers of their members, their objects, and the various topics which they discuss, are matters which are well worthy of being constantly chronicled and observed.

So also the growth of the native press. The number of newspapers and their circulation, that is the number of their subscribers, and the probable number of their readers,—are all matters well worthy of consideration by this Association, with regard to the progress of the people. Then the Bengalee literature, which is beginning to flourish, is a matter of the highest interest. There are original works in history, in fiction, in poetry, particularly in dramatic poetry, which seem to be a source of constant amusement to the people. The original poetry is, I believe, chiefly lyrical, but the poetic sense of the people is evidenced by the excellent translations which are made from the ancient Sanskrit classics. There is, however, a great want of social and economic literature. I believe we have no original works upon political economy and the progress of society ; that is, the main objects for which this Association is constituted are scarcely touched upon as yet by any original Bengalee works.

Then, again, connected with this is the study of abstract science. For this you will remember an association has just been, or is about to be, established under the auspices of a very excellent member of Hindu society here, Dr. Mohendro Lal Sircar, and another association is being established at the instance of the new Indian Reform League. I am sure that the efforts of both these societies will receive the utmost sympathy from this Association.

Under this part of my address will fall the subject of art. That, of course, is too large a subject to be treated of properly at this moment, but I must cursorily allude to it. Art, as I understand, is the imitation of everything that is beautiful in the circumstances, in the objects, and in the scenery amidst which people dwell. If one nation tries to imitate the art of another, the result is generally vapid and insipid; but if it really tries to imitate the objects of beauty in the midst of which it has its existence, there is every chance of its being successful. I mention this particularly, and for this reason, that you will do better by studying the ancient art of your own nation, by carefully observing the many beautiful natural objects of the country in which you live, and the physiognomy and customs of the various races who inhabit this continent, than by studying foreign models. Such models will chiefly be of use to you as evidencing the thoughtful manner in which European art has imitated all that is most interesting and beautiful in Europe. That remark particularly applies to the arts of painting, of sculpture, and of architecture. There is no necessity to invent new styles of architecture for the country. Depend upon it the existing styles of architecture are well suited to the circumstances in which you live,

and are far better than styles of architecture borrowed from other countries,—styles which were invented under entirely different circumstances.

Doubtless you will not forget the subject of music, which is somewhat recondite. The real reason, I suppose, yet remains to be discovered why the European music is not appreciated by the natives, and the native music is not appreciated by the Europeans. I believe that the science of sound, if steadily pursued, will yet supply the means for reconciling these differences, and it must be satisfactory to us to know that several native authors of distinction are taking up the question.

Lastly, in connection with this subdivision of my subject there is the observing of the various religious sects which are springing up among the people of these provinces. It is remarkable that the aboriginal races are partly yielding to Hinduism and are partly being converted to Christianity; very noticeable indeed is the manner in which Hinduism is proselytizing among them. The statistics of these religious changes must be of the greatest interest to an Association of this kind, especially regarding the progress of the numbers of those remarkable sects, the Brahmos, the Adi-Brahmos, and the Vedantists.

And now, ladies and gentlemen, I think I have come exactly to the end of the time which I had allotted to myself for this address. I have exhausted the few minutes allowed to each of the five main heads into which this great subject of social science has been divided; the object being to indicate how society advances, partly from material, partly from moral causes; how the energy of each individual is promoted by the means of preserving life, by the sense of possessing rights, by the security of industry, by the culture of the mind, and by the scope for legitimate ambition. I have endeavoured to say, however cursorily and imperfectly, as much as I could compress within the very brief time allowable, and I must ask you to excuse any imperfections in the manner in which I have touched upon the large number of topics which it seemed necessary to bring before you. My object, as you must have observed, was not to attempt any exhaustive treatment of so extensive a field, but rather to remind you of the greatness of the task which you have undertaken; and after making this inaugural address, I will only add my hope that your labours will be blessed for everything that shall conduce to the progress, the welfare and the happiness of the people of Bengal.

JURISPRUDENCE AND LAW.

1.—*Prison Discipline and Industrial and Reformatory Schools.* An Address by MISS MARY CARPENTER.

[Delivered on the 18th December, 1875.]

LADIES AND GENTLEMEN,—It is now nine years since the Social Science Association of Bengal was inaugurated. I am happy to remember that I was present at that occasion of this Society. It was then augured that its duration and its existence would not exceed one year. But nine years have passed, and we are assembled here together to consider a most important topic. There have been fluctuations in its existence, but I think it is a very good omen that this subject is chosen in order to revive its operations. The subject of prison discipline may not appear to many an attractive one, and yet there can hardly be one of greater importance to the community. We are all fully aware that crime is not only most injurious to the well-being of society, but it is extremely costly. It may be said, in fact, that scarcely any way of spending money is more costly and difficult than this. It behoves us all, therefore, whether directly concerned with the administration of justice or crime or not, to gain such information and so to ventilate it as to acquire correct ideas which will lead to the introduction of sound measures. Some twenty years ago the jails in Great Britain were in a very unsatisfactory state. Convict prisons had been erected at enormous expenditure, but there was something in the mode of conducting them which gave rise at various times to the most alarming outbreaks,

requiring the intervention of the military. We know certainly that in such a state of things there could be no reformation. Those convicts upon whom immense sums of money had been spent went into the world unreformed, and not only directly, but indirectly, did immense evil to the community. At the same time there was a system introduced into Ireland which produced most beneficial effects. The state of the prisons in Ireland had been fearfully bad. Convict prisoners sent forth not only did injury to the community, but 4,000 such persons were immured in them. But Sir Walter Crofton had been sent on a commission to investigate the subject, and to endeavour to introduce a better system. He did so, and with the co-operation of the Viceroy of Ireland introduced such a system that at the end of twelve years or so the number in the jails was reduced to 2,000. Prisoners were sent out reformed, instead of doing mischief to society. Society was willing to receive them into its midst, and they had an opportunity of beginning anew to live respectable and useful lives. We must therefore consider that it is important to ascertain what are the principles which are making such a difference in the results of the different kinds of prison discipline. Our Government thought it of so much importance that a Royal Commission was issued in order to enquire into the whole subject; and to endeavour to introduce into convict prisons in England such principles and discipline as to enable them also to turn out good citizens. Not only convict prisons, but State prisons were generally in a very bad state. There were some which were good, but as a general rule the public opinion prevailed that every one who went into a prison must become bad—must be rendered criminal, even if he was not criminal when he went in. Such general opinion, I fear, prevails even in this country. It was necessary therefore in England to ascertain the cause or one of the chief causes of the criminality which prevailed among prisoners. It was that they were kept in association and allowed to sleep together in association; and when they were sleeping together in association, it was perfectly useless to attempt to do anything of any other kind which would render them reformed. Such was the case in every large town, and such was the case in the large jail of Liverpool. In that jail the criminals were manufactured, that is, young children came in and returned to jail over and over again, and were finally punished with transportation, which was then in practice, at a great cost to the country. But when this came to be understood, the State thought it a very small amount to give £30,000 to build a new jail in which every prisoner should sleep in separation. The thing was inquired into in Parliament, and the result was that an

Act was passed regulating and laying down certain principles which should be carried out in all jails in England. Now many jails were so built that everything could not be done in the way in which it could be wished, but that principle was certainly carried out everywhere, that each prisoner should no longer be associated with others, but have a separate cell, and, if the sentence was short, be kept entirely in that cell day and night. Now, when such changes and results are laid before you, you will see that it is important to know what are the principles of prison discipline. Another result I may state to you of the change. Formerly any person in England who had been to prison found the greatest difficulty to get employment. There was a natural prejudice in the English mind against taking into employment any man who had been exposed to contamination in a prison. But now that the prisons are built on a separate system of sleeping, some reforms can be carried out, and the result is that society is now co-operating with Government in reinstating all those who unfortunately committed crime in their former state in society. That is done through the medium of the Prisoners' Aid Society. We see benevolent persons look after such individuals when they come out of prison, and endeavour to obtain them employment, and guarantee their good conduct. Now this has proved of so much importance and been so recognised by the world, I may say, that in 1872 there was a large Prison Congress held in London, the first that ever had been held on such a subject. Prison Congress representatives from every part of the United States, some 60 or 70 in number, met in order to assemble and discuss together the true principles of prison discipline. Every Government in Europe sent delegates. The subject was discussed, and the result was a wonderful agreement among all the delegates on certain general principles. The first of these was that there should be absolute separation, by night, of every prisoner. Many of the States went still further than that. There were many who even held the view that a criminal should be immured in absolute solitude for not only a few days and nights, but during the whole time of their term. That is what I would by no means agree to for many reasons, and that was not accepted by the Congress generally, but all accepted the principle which I have laid down to you. Now I will briefly state to you what are the principles of prison discipline which are at present thoroughly accepted in these days in England, and, I may say, throughout the world, wherever the subject has been properly considered and discussed. In the first place we are all agreed that the object of punishment is to minimise crime. No one can possibly doubt that we want to make crime

as little as possible in the country. In order to effect that, it is necessary that punishment should be both deterrent and reformatory. If you say that it should be simply deterrent, suppose you are satisfied with that, you will find that the end is not effective. I will not go into all the reasons which support that conclusion, but I will only tell you the results which have been universally accepted. If you say that the object of punishment should be only reformatory, you may adopt means which may excite others to commit crime: that is, you may make prisons too lenient and too agreeable, so to speak. For I have heard, in many cases, of prisons being made so pleasant and comfortable that criminals, when they are tired of a wicked life, commit some crime which will enable them to have rest in prison for some months or even years. We do not wish that. The principle then of prison discipline being both deterrent and reformatory, is carried out thus:—In the English system—which might be called the Irish system, because Sir Walter Crofton developed it in Ireland, or, if we now give any distinctive name to it, it should perhaps be the Crofton system, because that excellent man's name ought to be for ever associated with principles which have proved so beneficial—whenever a criminal is brought to jail, he is made to understand that he must undergo definite punishment for his criminal course, but he is informed that his future treatment and future condition will depend upon himself. That is to say, if he is determined to begin a fresh and new life, and submit willingly to what is inflicted upon him in prison, he will thereby be able to rise from one stage to another, and eventually to shorten the time of his punishment, and go out into the world an improved man. Therefore in English prisons, all criminals, when they are brought to convict prisons, have to undergo six or eight months of absolute separation. When I say absolute separation, I mean that they do not even work in association. They are not debarred from seeing their fellow-prisoners at all, but they are only allowed to see such as will try to improve them. They will see the officials of the jail; they will have visits from school-masters and chaplains; they will have unskilled work; they will have as meagre a diet as is considered good for their health, and they will in all respects have to feel that they are undergoing punishment. But if they have borne this in conformity with the regulations of the jail well and respectfully for six months, they will then be removed to another stage. This first stage does not exist in any of your prisons. Be kind enough to remember that fact. But, while they are undergoing this first stage, they are shown the evil of their past course, the system is explained to them by which they will

gradually rise, and they are prepared to go into association by day with their fellow prisoners, desiring to conform to their duty, and in all respects knowing that they are to avoid intercommunion in respect of their past bad lives. They are then placed in associated labour; but they still have to retain their separate cells by night, and they have to take even their meals in these cells. They rise from one stage to another, and this by a system of marks, by which their labour, their conduct, and their education is tested. In English prisons we attach great importance to education, not merely because it is good for all persons to have education, and to be able when they come back to the world to read and write, but it is considered that the exercising of their minds upon these subjects will draw them away somewhat further from their evil courses, and great value is therefore attached, in English prisons, to giving a sufficient education, and requiring them to pay attention to instruction given to them. They rise from grade to grade, regularly marked, and all can tell how far they have got on. In the Irish prisons there is a third stage which has not been introduced into English prisons, because there were difficulties in the way. That stage is putting prisoners who have attained a very excellent height on an open farm, where there is no physical hindrance to their absconding. If they act in a right manner and labour hard, trying to improve themselves on the farms in which they are placed, then it is felt that on account of their good conduct they are fit to go out into the world. If they misconduct themselves, they are at once put back into their original state. But without that system which prevails in Ireland, a system has been introduced in England of granting tickets-of-leave. That is another instance of the importance of properly developing principles. When the ticket-of-leave system was first introduced into England, it was considered a very excellent one. But it was so worked that it caused immense mischief. It is now worked well in connection with the Prisoners' Aid Society. I do not know whether that or any other intermediate stage would be of importance here, for reasons which I may allude to afterwards. Now the result of this has been a considerable diminution of crime; whereas some dozen years ago or more every one who chanced to have anything to do with prisoners found that they were not fit to be trusted, because the system then in force did not actually reform them. Now that they know that the system is good and that a real reformation is effected, persons are willing to employ convicts, especially in connection with the Prisoners' Aid Society.

Now in the prisons of India this system has never been fully

introduced. Of course, the prisons of India are placed under very different circumstances. But I am sorry to say that I have not found any prison, except one, where the system of separate association by night has been carried out. There are various objections made by many persons, or rather were made, when the idea was first put before the Government. Some said that in India the prisoners could not bear separate cells. I grant that they could not bear to be in such cells as we now have in England. In England the climate is cold, and we want prisoners to be kept warm; and in many ways cells which are extremely suitable in England would be perfectly unsuitable to an Indian jail. But I have seen in various parts of the country cells which are found to be very suitable. In your Presidency Jail, which appears to be an excellent and well-managed jail, the cells which exist are found to work very well; they are well constructed and sufficiently ventilated. In the jail I alluded to in Poona, which is a State jail, all the prisoners, about 400, have separate cells. The cells are constructed upon excellent principles. They are not costly, and the result is not only that discipline is more easily carried out, and that there is no danger of those frightful outbreaks which often occur in many parts of India, but the health of the prisoners is remarkably good.

Gentlemen experienced in these matters, and most of the jail superintendents, are able to give sound opinions on this subject. Every superintendent of a jail with whom I have conversed considers that it would be far more conducive to the health of prisoners to be confined in separate cells, because in separate cells there would not be that personal contact which must be injurious where there is an unhealthy condition. And at all times for sixty persons to sleep together without separation must have an injurious effect upon the health. But the moral effect of these associated cells or dormitories is very injurious. When, for instance fifty or sixty fresh convicts are first introduced into a prison, not having this first stage of separate cells, they must be thrown into association with other prisoners. They delight to speak of their evil experiences when locked up at night for ten hours with only the presence of convict warders. It is well known that night is the time when crimes are planned and perpetrated in jail; and it is all owing to this system. I lay that strongly before you, because I know it from corresponding with native gentlemen in different parts of India who are beginning to be alive to this matter. We know that all governments wish to have the sympathies of the people in any changes which they effect. In fact

I may state as a rule that all gentlemen of practical experience of jails in India are most anxiously desirous to have this separate system at once introduced, and gentlemen connected with Government with whom I have conversed have felt strongly in the same way. They say only that the expense would be so enormous that the Government cannot afford to do it. Now I believe that when once an opinion is thoroughly established on the matter, money will be forthcoming. I am perfectly astonished at the number of splendid buildings which have been erected in this country in the presidency capitals during the last five years; and I cannot doubt but that money will be found when every one is thoroughly convinced that it ought to be done. Besides that, I know that many native gentlemen are possessed of means, and are possessed of extreme benevolence. I know most of Bombay; therefore I particularly speak of that place. I know of a splendid hospital erected by a single native gentleman, and different other institutions similarly erected. One native prince has carried out his benevolence so far as to erect a magnificent drinking fountain in London for the good of the people. Well, then, if it is known and understood generally that a large sum of money would enable suitable jails to be erected in proper places to carry out prison discipline efficiently, I cannot but believe that in this country and city, so many noble and rich princes will think of caring for the moral evil of the present system as well as the physical. That being thoroughly accepted, I must say that I hope one other thing will be carried out, and that some instruction will be given to those unfortunate men who are prisoners. I know that in some jails there are schools. These schools have almost always been carried on and taught by convicts themselves. That cannot have a healthy moral influence upon convicts. There is besides that no instruction of any kind given, and when we think what thoughts must fill the minds of these convicts, and that they have nothing to think of except their crimes, it must appear very desirable to give them some instruction. But I do not say that it will be possible to teach all of them to read and write; but if thoroughly good instructors of high moral character were appointed to jails, they might give such addresses to convicts as might do them some good, and inspire them with better feelings. This I can tell you from my absolute knowledge. In a jail in Hyderabad in Sind, some seven or eight years ago, a scheme was put in practice, under which some enlightened native gentlemen with the permission of Government were in the habit of giving addresses to the prisoners in jail upon moral topics. I was present at one of those addresses, and though

I did not understand a word, I thought it was highly interesting to see some 700 convicts listening earnestly to the gentleman who stood before them, evidently with deep interest. I therefore throw this out as a suggestion, and I hope that it will be taken. But I have more pleasure in mentioning the extremely admirable development of labour which I have seen in your jails. I have visited the United States where labour is very much developed in jails, but certainly I must say that in some jails in India you exceed any other part of the world that I am acquainted with in this respect. I really have been quite astonished and delighted with the two jails in this city, the Presidency and the Alipore Jails. I have there seen convicts working and looking exactly like free labourers. They were working with intelligence and pleasure, and I was happy to learn from the Superintendents of the Jails, the Inspector-General, and from the Jailors, that they were positively working and doing as much in jail as any free labourer would do. They are employed from eight to ten hours a day—eight being generally the time for working given to them. Now that does a great deal of good to them, as occupation gives a tone to their thoughts. I was particularly struck with the Printing Department and the actual pleasure which the prisoners appeared to take in developing their work; and when they have such work as that—skilled labour—they do not feel disposed to show any insubordination. Their conduct is good. And there is an excellent stimulus to them to obtain the privilege of having such labour; for this work is reserved for those prisoners who have conducted themselves the best, and if any insubordination occurs they are thrown back to what they were doing before. I also saw an admirable jute mill working in the prison. I was informed that the mill was probably the first in Bengal, and at any rate it had led the way to many others being established. Now this is a great benefit conferred upon the prisoners, for when they go out, they are well skilled and disciplined, and their labour is largely sought for, and they have no difficulty in getting remunerative work when they go out, and owners of jute mills are glad to get their trained labour, and they are taught to work in such a way that they are able to be good workmen afterwards, and it is an immense encouragement to the prisoners. I think then I need not continue upon that subject. I only hope that this address of mine will lead to considerable discussion upon the subject in the Social Science Association. In Great Britain, the British Social Science Association, almost from the beginning of its existence in 1857, paid particular attention to this subject. Members of the Government took part in the discussions, and we cannot

doubt that it was owing to the kindly and cordial help of this Association that effect was given to the passing of good laws. I hold that it is our duty when we deprive a man of his liberty to try and benefit him morally, and to turn him out a better man than when he came in. I hold that to be a solemn duty.

Yet there is a more pleasant subject on which I shall touch now, and it is particularly pleasant, because it is now hopeful. When I was here nine years ago there was no reformatory in all India, except one which was begun in Bombay by the late David Sassoon, and which was an attempt to show that these things could be done. But opinion has been progressive, and gentlemen who are acquainted with what has been done in England have come to India, fully persuaded of the importance of the reformatory movement.

Some 25 years ago in England nobody believed, or only a very few people believed, in the reformatory. They did not believe that boys and girls who had been imprisoned over and over again ever could be turned into honest youths; but there were others who had a firm faith in honest human nature, and who believed that if these poor boys and girls were put into suitable circumstances, and were taught to work well, and had good influences exercised upon them, and proper teachers, they might turn out well; and eventually, after many sacrifices and great difficulty, we obtained an Act of Parliament whereby these boys and girls might be sentenced after imprisonment to schools where they should be placed under proper management with Government Inspectors. I will not detain you with going through the history of this movement. Suffice it to say, that after now about 20 years' working of these institutions, the Secretary of State was able to say at the Prison Congress of 1872 that crime had diminished in our country, and that he believed that a great deal of this was due to the reformatory treatment of children. Great opposition was made to it on account of the expense. It was thought we ought not to spend so much money upon these boys and girls. But we are able to prove to demonstration, taking this difficulty of money, that it is cheaper to reform these children than to let them go on year after year, and eventually become unreformed convicts, and be either transported or sent to life prisons. All this we had to encounter, but we at last succeeded, and triumphantly. We can now say that though 20 years ago there was in England, as you have now, a real criminal class of children in the country, the little boys who were formerly imprisoned over and over again, are now reformed. If you doubt this, you can go to the Presidency Jail, and there see 50 boys, some very small, with

bracelets of iron upon their arms, and rings which indicate the number of times that they have been imprisoned. If you have a human heart, you will grieve. There are in the Presidency Jail the results of letting these boys get into jail over and over again, some 150 young men, between the ages of 14 to 20, all of whom are running the same career. From little boys they have grown to be men, and they are now really wicked. Everything which can be done, is done under the circumstances. They are kept separate from the adult prisoners. They are taught skilled work. In every way the officials are trying to do them good. But it is absolutely certain, it has been demonstrated in our own country, that no prison can ever reform children. It is impossible. If therefore a reformatory school is introduced into jail, it ought not to be framed so. It is merely a juvenile department of the jail. You may hear of a reformatory school at Poonah and other places. They are not reformatory schools, but merely juvenile departments of the jail. Well, then, we established that principle, and now you cannot find a boy in the whole of the Empire who has been more than twice imprisoned. He can only be twice imprisoned by a Magistrate or Judge; but, if let go, he cannot come in again; but when he comes in again, he is always sent to a reformatory school. We did not consider it just to the rising generation, to young persons under the age of fourteen, still less to those under the age of twelve, to have them suffer prison constraint when most probably they were not old in guilt, but were placed in such circumstances as to be necessarily drawn into crime. They might have had bad parents, or they might not have been cared for enough by their parents, and influenced by bad companions. Now children will not naturally go to steal. It would be impossible for them to do so if you took care of them. We never rested until we got another Act passed by Government, whereby children under 14 must be sent to an industrial school without going into prison. These are called certificated industrial schools. There may be native gentlemen in this room who have been to England and seen these schools. The children have generally obtained profit from these schools, and the result has been most satisfactory. They have not the taint of a prison attached to them; and though boys would not have learnt any mischief in jail in England, still the mere fact of being in jail is considered disgraceful. These boys are trained and educated in these industrial schools, and turn out almost invariably capital useful working boys. We give them a general education, and many of them form part of our emigrants to the colonies that they may have a wider field, and we receive excellent accounts of them, and numbers

of them go to sea. We have in fact industrial ships, and a large man-of-war has been granted by the Government, and they learn several duties of seafaring there, and other trades. Merchants are very glad to get them into their employment.

Now I was fortunate enough, before I came to India, to receive a copy of the Bill which has been laid before the Supreme Government to sanction industrial and reformatory schools for India. I was greatly rejoiced, because I know that in many parts of India there are enlightened and liberal native gentlemen and English gentlemen who are most anxious to establish such schools, and willing to bear some portion of the expenses. I am happy to say that at Madras there is a native gentleman who has been in England, who has already offered 40 acres of land to establish a reformatory school upon it; and a young native prince has offered to take the expense of the building, and subscribed handsomely besides; but it is useless to begin anything of the kind until an Act has been passed, because it is necessary to have powers of legal detention. It is necessary to set the police to catch these boys if they run away; and if the boys know that this is the case, they will not run away. I am happy also to say that His Honor the Lieutenant-Governor of these provinces has himself laid a measure before the Government of India of a similar character. And I am glad, after looking at their schemes, to find that both Sir Richard Temple and the Viceroy entirely wish that these boys should not be sent to prison at all. I believe the general features of the Bill will be that all boys (it will not for various reasons touch the case of girls) found in a state of vagrancy, without proper guardianship, and without any proper means of living, may be sent without being sentenced to prison to a reformatory industrial school, and may be sent there up to the age of 14; and they cannot be sent there for less than two, or more than seven years. They must not remain in school beyond the age of 16. These schools are to be established in different localities, and the local Governments are making arrangements for the Government schools. But in the board of management there must always be two native gentlemen out of a board of five, which I think is very desirable, because it has been found in England so important to enlist the personal sympathy and interest of the board in the management of the school. That is the general outline of the Bill, and I am further glad to see in the Bill proposed for this presidency, that all boys now in jail not above 12 and with sentences of 3 months to run may be sent straight from the jail to the reformatory. There are several little boys of

ten years at the Presidency Jail, and I saw at Madras one poor little boy ten years old in irons who had been sentenced to imprisonment for life. I will now just briefly sketch to you the general principles upon which industrial schools are established, because I observe that it is in this Bill assumed that such schools are known and understood in India. But when I find that some juvenile departments of prisons are called reformatories, it is very necessary that we should clearly ascertain what reformatories are. Now in the first place there should be nothing of the jail element in reformatory schools, except the element of detention, and that is to be effected not by walls, bolts and bars, but only by means of moral discipline. They must therefore be free open houses, where these boys can feel themselves in a home. There must be always a considerable portion of land, for it has been found that a large compound has decidedly a most useful and reforming influence upon young persons. They may want to work upon land after they go away from the reformatory. They should learn all general trades which will give a development of the muscles. But this labour is not to be imposed for the sake of funds, but the sake of doing good to the boys. That principle must be generally laid down. We usually give them some light work, and also teach them some trades. We like every boy to become thoroughly honest, and to be able to make his own clothes. He is then fit for any position in life. I need not say that moral instruction should be given to them. These schools are not to be in any way like prisons, but they must be governed by moral force. The schools should not be large. It has been universally accepted in England, that it is better not to have more than 50 or 60 boys in one school; that is as many as can be properly influenced by one head; and it is therefore much better to have a number of small schools in different parts of the country than one large one. There is one such large school in England which contains some hundreds of boys, but in that school there are a number of separate houses independent of each other, though under one general management, and all working together. There should be as much friendly influence exerted from outside as possible. Gentlemen, and ladies too, should take an interest in the schools. We find the influence of ladies in visiting the schools is very beneficial to boys. It is natural for the female sex to look after the young, and their influence upon young boys particularly is very good. Besides this, care should be taken to watch over them when they are put out in the world. We put out boys by license. That has been also provided for in the Bill. We put them out by license freely, but we look after them

carefully ; and if they are not happy or not doing well, we take them back. But if they do well, we give them passes. And at the end of their time when they are sent into the world we still are required by the Government to give a report of them, to keep an eye upon them, to correspond with them, to see and to learn how they are getting on. The schools are under a separate inspector, who has charge of all the reformatories in Great Britain, and this inspector requires us who are the managers to give a report every year. He can therefore test absolutely the success of the different institutions. I think I have given you a general sketch of the subject. If there is any one here present who wishes to ask any question, I shall be happy to answer it, and I can only hope that the matter will receive your careful consideration.

Dr. EWART said he had been asked to propose a vote of thanks to Miss Mary Carpenter. He need not remind the meeting that her personal reputation as a philanthropist had travelled to this country long before she paid a visit to it six or seven years ago, and the rapidity with which this large meeting had been convened showed the interest we took in the great principles which it should be our duty to perform, and see carried out. The great interest she had always taken in the subject of prison discipline is a matter which reflected the very highest honour on her philanthropic character. It was not only that prison discipline, according to the principles she had always enunciated, should be carried out with the object of deterring criminals from committing crime, but to reform them—to make them good, honest, industrial members of society—previous to passing them out into the community. And this had been found no doubt to be very practicable in England and America, and other countries, possessing a similar stage of civilization. In other countries there could be no doubt that some system, modified to suit the criminals of the country, might be eventually carried into execution. And he believed that with the authorities here the only difficulty had been the want of means, and that in several of the prisons in Bengal and the N. W. Provinces there were a certain number of cells set apart for the carrying out of the separate system ; and that education had been carried on in some, as an experimental measure, but not with that amount of success which could be desired. But, as time went on, the same reforms which were being carried out in other departments of the state, would eventually be carried out to their fullest extent, to meet all the requirements of civilization in good time. It had come to his notice that the Government of Bengal were not altogether behind-hand in the matter of Juvenile Reformatories. That subject was under consideration, and they would soon be established. And it was in this direction, that the philanthropic movement headed by Miss Mary Carpenter would be productive of a very large amount of good to the community. It was in young criminals above all others that we found a soil on which good fruit could be reared, and which could be easily trained to proper paths. And even after they had become criminals, if they were brought up in the way they should go, they would not depart from it readily. He had therefore, on behalf of the meeting to propose that this meeting do congratulate Miss Mary Carpenter on her return to this city, and remembering that she was mainly instrumental in the formation of this Social Science Association, to tender her the best thanks of

the meeting for her past services, and this most valuable and instructive lecture on Prison Discipline and Juvenile Reformatories.

Babu PEARY CHURN MITTRA said—It gives me great pleasure in seconding the resolution. Having been connected with the Bengal Social Association from its formation, I am fully sensible of the benefits which Miss Mary Carpenter has conferred upon this society. I remember the day when she was here last, the day at which a meeting was held at the Asiatic Society's rooms. In the presence of Lord Lawrence and Sir Cecil Beadon, Miss Carpenter gave an excellent address, and it had such an effect upon all the gentlemen present at that meeting that they resolved upon founding this Society. Subsequently several meetings were held, and a committee was formed of which Miss Carpenter was a member; and I had the honor of being associated with her on that Committee, and I can assure you that we were deeply indebted to her for the benefit of her advice and views on different matters which the Committee had to settle previous to drawing up the scheme for the formation of the Association. Then we had a meeting at which another very valuable address was given, and when she left on account of ill-health for England, she continued to correspond with us and offer suggestions. Taking all this into consideration, I assure you that I feel deeply grateful to her for her valuable services to the Society. Her presence at a day like this when the Society owing to some causes has not been so active, infuses new life and energy into us; and the address which has been delivered to this meeting will no doubt lead to important discussion at our next quarterly meeting, and I am sure, that it will also lead to important results with reference to the improvement of prisons and the reformation of juvenile prisoners. Time has far advanced, or I could enter into different matters largely. I will therefore conclude by seconding the resolution moved by Dr. Ewart.

MISS MARY CARPENTER returned thanks in appropriate terms, and was glad to see that the Association had taken up the subject, from which she augured great benefit.

The Revd. KRISTO MOHUN BANERJEA moved that the thanks of the meeting be conveyed to His Honor the President for his kindly taking the chair on this occasion, and also for having accepted the office of President. He was glad to find that before the Society had actually become defunct, His Honor the Lieutenant-Governor had come forward to be its President, and had thus infused new life into it; and also that on the occasion it should have heard such an excellent address from a lady to whose exertions they were mainly indebted for the origin of the Society. He hoped that the resolution would be cordially received.

Moulvi ABDOL LUTEEF KHAN BAHADOOR seconded the resolution.

HIS HONOR THE PRESIDENT said :—Ladies and Gentlemen,—Though I am unwilling to detain you at this late hour of the day, yet I must say a few words in acknowledgment of the resolution which has been proposed and carried. My reason for accepting the office I now hold, of which I now exercise the function for the first time, was this—that I understand that this is a Society which has for its object the promotion of measures which may lead to the mental, moral or material advantage and advancement of all classes of the people of Bengal. That being the case, it is not only a pleasure to me, but I deem it a bounden duty, in justice to the people who are temporarily placed under my charge, I deem it a pleasure as well as a duty, to accept that office and to do my best for the interests of my fellow-subjects. I do not share the discouragement which the

Rev. mover of the resolution expressed, as to the partial suspension of the benefits which may be expected from such Associations as this. For whether or not the Association is as flourishing as in the days of Sir George Campbell, this much I venture to assume, that since the days of Sir George Campbell there has been a very great diffusion of civilized ideas among the many classes of the people, and I think that fact is due in a considerable degree to the healthy, renovating and invigorating discussions which the existence of this Association has called forth. On this subject I shall say nothing further at this moment, because I have hanging over my head the sad necessity of troubling the Association very shortly with an inaugural address. I will not trouble you now therefore with any crude opinions upon the subject. I will endeavour then very briefly to give such assurances as the magnitude of the importance of the subjects discussed by the Association demands, and I will endeavour to explain, and that very briefly, what our future course, in my opinion, ought to be.

Then one word as to the subject of the instructive lecture which has been just delivered. As to the separate cell system there have been many objections raised by many persons, yet I am sure that the decision which has been accepted is on the whole in favour of the introduction of that system. The real difficulty, as has been pointed out, is the question of expense, and I need not say, that if there be one subject more than another on which I ought to be reserved, it is the question of finance. Then in regard to the question of Juvenile Reformatory Schools, I can assure the Association that there is every probability of the early realization of all the wishes and endeavours and anticipations which the Association could possibly form, for I believe I may say that in respect to Juvenile Reformatories, what I may call the great cry has in His Excellency the Viceroy a most intelligent and zealous advocate. It is now nearly a year since I endeavoured to submit to His Excellency the details of a law which I and my advisers in Bengal thought might be safely introduced here. We have the power, of course, to pass such a law as this in our own Council, but the Government of India preferred that the measure should be passed by their Legislature. Of course if they passed the Bill, it would be sufficiently worth our purpose, and I believe I may say, that the Bill will be passed very soon, though I cannot say how soon; and that as soon as it is passed, I may say on behalf of the Government of Bengal, not a single moment will be lost in connection with the measure, to introduce reformatories at various places in these provinces; and I am sure it is an augury for our future success to see various branches of society so much impressed with the interesting manner in which this address of Miss Carpenter's has been given. I am sure we are much impressed with the great advantage of hearing now this lady lecturer. I believe that no mere gentleman lecturer could possibly have got together at so short a notice such an influential audience as has been assembled here to-day. Still more am I certain, that no mere gentleman lecturer could have addressed us upon such a dull subject with so much *empressement* and embellishment as Miss Carpenter has done.

2.—*On Reformatory Schools and the proper classes of juvenile criminals to be subjected to reformatory treatment.* By H. BEVERLEY, ESQ., C. S.

[Read on the 23rd May 1878.]

The Reformatory Schools Act (V of 1876) is now in force in Bengal, and a Reformatory School has just been opened at Ali-pore. A few remarks on the subject, therefore, may not be out of place at the present time.

It is not my intention to give a history of the Reformatory movement in Europe or America. I shall merely content myself with saying—what probably every one in this room knows—that the results in Great Britain have been pronounced on official authority to be most encouraging, and that it is probably the one direction of all others in which our efforts to cope with and diminish vice and crime have been crowned with a large measure of success. I append to this paper a statement which I think shows this fact very clearly, and I will only add here that public opinion in England is as fully impressed as ever with the importance of this mode of dealing with juvenile crime. By the last Report of the late Mr. Sydney Turner, who, first as Resident Chaplain at Red Hill and subsequently as official Inspector of Reformatory and Industrial Schools, devoted his whole life to the subject, there were at the end of 1875 sixty-five Reformatories and 117 Industrial Schools in England and Scotland. On that date the total number of children in Reformatories was 5,615, besides 925 out on license; and in Industrial Schools 11,776, besides 763 on license.* The

* It may be explained here that in England there are two distinct classes of institutions for the reclamation of the young—(1) Reformatory Schools which are regulated by the Statute 29 and 30 Vic. c. 117, and (2) Industrial Schools, regulated by Statute 29 and 30 Vic. c. 118. By the Reformatory Schools Act any juvenile offender under the age of 16 years who is convicted of an offence punishable with penal servitude or imprisonment and who is sentenced to imprisonment for not less than 10 days, may on the expiration of his sentence be sent to a Certified Reformatory School and be detained there for a period of from 2 to 5 years. Provided that no child under 10 years of age can be sent to a Reformatory School unless he has previously been charged with an

ascertained results of those who had been discharged from time to time showed that from 70 to 90 per cent. of them were doing well.

The extension of the system to Bengal was mainly owing to the exertions of the late Mr. Heeley, by whom the first Bill on the subject was drafted. Without, however, pausing to examine how that Bill finally grew in Sir Alexander Arbuthnot's hands into the Act now in force, I shall at once endeavour to place before you the main features of that Act. The object of the Act is to provide Reformatory Schools for male youthful offenders, by which term is meant boys who, being at the time under the age of 16 years, have been convicted of an offence punishable with imprisonment or transportation. After providing for the establishment of such schools, the Act goes on to authorise Courts and Magistrates, when passing sentence of transportation or imprisonment on a youthful offender, to direct that *in lieu of such sentence** he may be sent to a Reformatory School and be there

offence punishable by penal servitude or imprisonment, or unless he is sentenced by a Judge of Assize or Court of Session. An Industrial School is defined to be a school in which industrial training is provided, and in which children are lodged, clothed and fed as well as taught, and the following classes of children may be detained in them by a magisterial order:—(a) children under 14 who are found (1) begging, (2) vagrant, (3) destitute or (4) frequenting the company of thieves; (b) children under 12 convicted of a punishable offence but not previously convicted of felony; and (c) refractory children under 14 either (1) in charge of parents or (2) in workhouses, pauper schools, &c. No child, however, can be detained in an Industrial School beyond the age of 16 years, except with his own consent in writing. Both classes of schools are maintained, either wholly or in large part, by private benevolence or local funds, and in both the managers are at liberty to decline to receive any particular child.

The Indian Act deals with Reformatory Schools for convicted offenders only.

* It will be observed that the Indian Act does not, like the English Act, insist upon the offender undergoing a certain period of imprisonment before being removed to a Reformatory School, although sentence of imprisonment must be passed upon him. Mr. Turner considers that much of the remarkable success of Reformatories is due to this special feature in the English system. "Nothing has been more certainly demonstrated," he writes, "in the practical development of the Reformatory system than that juvenile crime has comparatively little to do with any special depravity of the offender, and very much to do with parental neglect and bad example. But on the other hand it is most important as well for the moral impression to be made on the offenders themselves as for the discouragement to crime, and the impression made on the public feeling of the community, that all wrong doing, however originally suggested or afterwards encouraged by external influences, should be punished, and that vice and mischief should not seem to be rewarded and encouraged, or so treated as to place those guilty of them in a better position than the children of respectable and honest parents. The preliminary punishment of the offender involving the disgrace of a public conviction contributed materially to this object." So long, however, as so many jails in India are without separate cells or even a juvenile ward, a preliminary detention in prison would probably be productive of more harm than good.

detained for a period of not less than two and not more than seven years; provided that no boy may be detained in a Reformatory School beyond the age of 18 years. A similar order may, on the motion of the jail authorities, be made in the case of a boy sentenced to imprisonment, at any time during the period of his sentence. The order of detention may, if passed at the time of conviction, be made by a Magistrate of the first class, a Presidency Magistrate or the Superior Courts; or, if passed after conviction, by a Presidency Magistrate or a Magistrate of the first class within whose jurisdiction the offender may be imprisoned. In either case the Court or Magistrate must be satisfied, first, that the offender is under the age of 16 years, and secondly, *that he is a proper person to be an inmate of a Reformatory School*. I lay stress on these last words because it is in regard to the discretion thus imposed upon Courts and Magistrates by the Act that the few remarks I have to make will be directed. The Act then provides for the proper management of the Schools and for the licensing or apprenticing of boys detained therein after they have attained the age of 14 years. With these provisions I am not at present concerned.

It will thus be seen that a wide discretion and a grave responsibility is imposed upon Courts and Magistrates making an order under the Act—

(1) As to the *persons* who should be detained in a Reformatory School; (2) as to the *period* for which they may be ordered to be detained.

I say a *grave responsibility* advisedly, for it is clear that if an improper person be hastily or through oversight committed to a Reformatory School, the evil consequences will not be confined to that boy but will affect the whole school, and a succession of such mistakes might seriously jeopardise the success of a most promising experiment. It is true that the Act reserves to the Local Government the power to withdraw a boy at any time from a Reformatory School and to compel him to undergo the residue of his sentence of imprisonment or transportation. But it is probable that recourse would only be had to such an extreme measure in the last resort, and meanwhile the whole tone of the School might be sapped and undermined. On this subject the remarks of the late Viceroy may fitly be quoted in this place:—

“I would say one word more on the subject of this measure, and that is, that a great responsibility will rest upon Magistrates and the Local Governments in carrying the Act into operation. It is, I think, hopeless to expect the Act to work properly if

these reformatory institutions are started by filling them with a class of boys who have already four or five separate convictions against them, that is to say, who are confirmed thieves and bad characters, and whom, if put into a reformatory institution, there would be little hope of reclaiming. The manner in which I trust the Act will be carried into effect is, that great care will be taken in the selection of boys for those institutions, and that, for the most part, boys should be put in them on their first offence, so that the salutary influences of industrial education may be applied to those who offer the best prospect of being permanently benefited."

What I propose to discuss in the present paper, then, is—

1. What class of youthful offenders are fit and proper persons to be detained in a Reformatory School? and
2. What should be the period of detention in the case of fit and proper persons?

In Mr. Heeley's original Bill it was proposed to vest the power of sending a boy to a Reformatory in the Government, and not in any Court or Magistrate. "This is advisable," he wrote, "because the Government acting on the motion of the jail authorities, will often be able better to judge of the fitness of a boy for reformatory treatment than the Magistrate who sees him once at his bar and knows nothing but the actual charge against him." Sir R. Temple, however, thought that "the application of the law to each case should be left to the judgment of the ordinary criminal Courts," and this principle was adopted by Sir Alexander Arbutnot in framing his Bill. Opinions were, however, invited as to whether any difference should be recognized with reference to the nature of the offence proved; and on this subject Sir R. Temple wrote as follows:—"Of course it would be very desirable that the nature of the offences for which a boy would be liable to be sent to a Reformatory should be clearly specified so as to obviate altogether such results as a boy being sent to a Reformatory for picking a flower,* or for any other petty offence for which imprisonment might be inflicted but involving no moral turpitude. But it appears to the Lieutenant-Governor that it would be impossible to lay down precisely in the Bill the offences for which a Magistrate ought or ought not to send a boy to a Reformatory, and that in this matter much must necessarily be left to the discretion of individual Magistrates. The Lieutenant-Governor does not anticipate any abuse of the powers which the Bill proposes to accord to magisterial officers."

* A case of this nature actually occurred a few years ago in England.

The Government of India appear to have accepted this position, and it is accordingly left to the discretion of the Court or Magistrate concerned to decide whether any particular boy is a fit subject for reformatory treatment. At the same time it is provided by Section 22 of the Act that the Governor-General in Council may from time to time make rules consistent with the Act for regulating the periods for which Courts and Magistrates may send youthful offenders to a Reformatory School according to

- (1) their ages,
- (2) the nature of their respective offences, or
- (3) other considerations.

After the passing of the Act, local Governments and Administrations were consulted as to the form these rules should take, and on a consideration of their replies, the following rules have been laid down and published in the *Gazette*.

“*Rule I.* No boy shall be sent to a Reformatory school on a first conviction (except as provided in Rule III), if under ten years of age, for a less period than five years; if over ten, for a less period than three years, unless he shall sooner attain the age of 18.

“*Rule II.* On a subsequent conviction for a similar offence, a boy under ten years of age shall not be sent to a Reformatory school for a less period than seven years; if over ten, for a less period than five years, unless he shall sooner attain the age of 18.

“*Rule III.* A first conviction may bring a boy under Rule II—

- (1) if he belongs to a criminal tribe within the meaning of Act XXVII of 1871, Section 2;
- (2) if either of his parents is an habitual criminal;
- (3) if he is destitute; and (probably or is meant)
- (4) if the offence of which he is convicted is one arguing great depravity.

N. B.—The word “depravity” here means a general corruption of morals apart from the specific criminality of the particular act.”*

These rules will of course be subject to modification by the light of the experience that may be gained from time to time by the Managers of Reformatory Schools in India.

It seems convenient that I should pause here for a moment in order to enquire (1) What are the main features and causes of juvenile crime? and (2) What is the distinctive object and effect of reformatory treatment? That physician would be reckoned a sorry empiric who should prescribe a certain course of treatment for his patient without being able either to diagnose the disease or to understand the nature of the proposed remedy.

* Home Department Notification, No. 340, dated 13th March, 1878.

The Indian Penal Code has followed the maxim of English law in prescribing that up to the age of seven years a child is incapable of committing crime. Between 7 and 14 a child is by English law deemed *primâ facie* to be *doli incapax*, but *malitia supplet aetatem*; in other words, the presumption of innocence may be rebutted by evidence of a mischievous or malicious discretion. After the attainment of 14 years the child is supposed to be fully responsible for its actions. In India the age of discretion is placed two years earlier than in England, but "nothing is an offence which is done by a child above seven years of age and under twelve who has not attained sufficient maturity of understanding to judge of the nature and consequences of his conduct on that occasion."

Now under the French Penal Code offenders under 16 years of age are held to have acted *sans discernement*, *i. e.*, without sufficient knowledge of right and wrong, and to require correctional training rather than penal treatment; and I have the authority of Mr. Sydney Turner for saying that it was this French principle which first laid the foundation of all that has been effected through the instrumentality of juvenile Reformatories.* The principle rests upon a double truth—first, that up to a certain age children are not altogether responsible for their acts;—they may know no better, they may have been surrounded by evil influences and driven to crime by the bad example of parents or others about them—and again, that at the same early period of life, when the character is impressionable and not yet hardened into form, vicious habits may be eradicated and replaced by habits of order, industry and self-control. In the case of adults, what the law chiefly looks to is the *punishment* of the offender, considering that punishment is the surest means of preventing a repetition of the offence either by the particular offender punished or by others. And, although every enlightened system of penal discipline aims also at the moral reformation of the offender, such attempt at reformation is always in the case of adults subordinated to the idea of punishment; and I think I may venture to say that its success has never entitled it to any but a subordinate place. The French principle, however, proclaims that in the case of children reformation should be the leading idea,—that they are more to be pitied than blamed,—that the fault may lie with others,—that the child's criminality may be due to bad example, evil associations and surroundings, ignorance or destitution—

* The first English Reformatory, *viz.*, that at Red Hill in Surrey, was based on the model of M. De Metz's Agricultural Colony at Mettray.

causes beyond the child's control, and that if these causes are removed and the child transferred into a healthier atmosphere, it may still be possible to mould its character upon the lines of honesty and virtue.

I regret that I have not been able to find any complete statistics as to the classes of offences committed by juvenile criminals; but it is probable that with few exceptions they may be grouped under the following heads:—

I. Offences against property, comprising the various forms of theft, criminal trespass and mischief.

II. Offences of violence, *e. g.* hurt.

III. Offences against morality, such as indecent assaults, and so forth.

Now it will readily be admitted that the first class is by far the largest; it comprises the great bulk of juvenile crime.* And the causes of this class of juvenile crime may be referred in the first instance to ignorance, destitution, idleness, evil associations or the force of bad example. All these are preventible causes. I do not say of course that there are not hardened juveniles who have become utterly vicious and practise vice for the mere pleasure and excitement it affords; unfortunately there are but too many who, even after they may have been rescued from crime and given the opportunity of leading honest and virtuous lives, deliberately prefer to return to the ways of vice. But what I mean to say is this, that before you condemn a boy as being bereft of all moral principle, all sense of right and wrong, you ought to look at his antecedents, and, if you do, in nine cases out of ten you will find that the boy was first driven into crime by some such preventible cause as those I have named. This consideration applies with special force to this country, where we find whole tribes and castes devoted to crime, and where the children are carefully trained to follow the criminal pursuits of their forefathers. Such boys, if taken in time, seem to offer most favourable material for reformatory treatment. What can be effected in the way of the reclamation of such tribes is shown by the success of the Thuggee School of Industry at Jubulpore.

The offences grouped under classes II and III are of comparatively rare occurrence, nor do they invariably exhibit signs of moral depravity. So far as they are due to a want of self-control

* Of 1210 juveniles committed to Reformatories in England and Wales in 1876, 1123 or 92·8 per cent. were convicted of offences against property. Of the balance (87) 18 were convicted of assault, 41 of vagrancy, and 28 of other offences not specified.

over the temper and passions, the offenders might be benefited by the discipline of reformatory treatment; but unfortunately they seem to be quite as often due to an entire perversion of the moral sense, to a vicious and morbid nature which it would seem beyond the power of man to eradicate. Of such a character probably would be the case quoted in the law-books of the boy of ten who murdered and mutilated his little sister and then buried her mangled remains under a dunghill.

As regards class III, Mr. Heeley's Committee wrote:—"As to those boys who have been actually convicted by a Court of immoral practices, we think they should not be admitted into the reformatory, but should be made to serve out their sentences in jail."

Now the object of the Reformatory system is to substitute for a short term of penal incarceration a longer term of detention under milder conditions during which the child subjected to it may be trained to habits of industry and virtue. So far as that every inmate is detained under a warrant, and may be captured and brought back if he escapes, such confinement may be regarded as a mild form of imprisonment; but a Reformatory institution ought in reality to partake more of the character of a school than of a prison, and is so described in the legal literature on the subject. If prisons, they are in England prisons without walls or warders; in place of physical restraints, they appeal to a boy's better feelings and to the power of kindness which is the ruling principle of the institution. The main lines on which the reformatory system has invariably been based, whether in England, America or France, are indeed much the same; *viz.*, "the detention of the offender for a long period of corrective and industrial training, the introduction of the family system and domestic feelings and habits into the schools and the keeping the offender under supervision after leaving the school by placing him out in employment on probation under license (or ticket-of-leave) previous to his final discharge." And the course of treatment pursued in Reformatory Schools is, or ought to be, three-fold,—(1) elementary education, (2) industrial training and (3) cultivation of the moral sense. In the Reformatories of Great Britain great importance is naturally attached to religious influences; but in this country, for reasons which are well-known to you all, religious instruction is out of the question in Reformatory Schools which are maintained by the State. It is clear, however, that much may be effected in the cause of morality by a judicious system of school discipline, without the inculcation of any religious tenets.

The educational standard is not ordinarily, and need not be, a high one. It is mainly useful with the view of drawing out a boy's

mental powers, teaching him to think for himself, and enabling him to practise his trade or occupation with skill and intelligence.

Industrial training, as a main element in the reformatory process, has long been known to our Indian system of prison discipline. Besides the wholesome effect which regular employment must necessarily have upon the mind, such training will be of use in furnishing each boy with the knowledge of a trade or trades which he may be able to pursue after his discharge from the school.

And, last but not least, the discipline of the school ought to impart such a moral training as will tend to strengthen a boy's character and enable it to resist temptation in after-life. The daily routine of the school programme will inculcate in him habits of order, regularity, industry and self-control. Aided by the precepts of masters and visitors, the general management of the school ought to inspire a love of truth and straightforward dealing and a hatred of lying and deceit. Personal kindness and exact justice will at once draw out the affections and awaken a sense of right and wrong. A judicious system of rewards and punishments will be found of great assistance in enlisting the boy's self-interest and voluntary action on the side of obedience, duty and industry.

I have already stated that the great bulk of juvenile crime consists of offences against property, and it is obvious that the reformatory treatment above described is specially adapted to deal with this class of offenders. But a question on which great diversity of opinion has existed and still does exist relates to the stage in a young offender's career of crime at which he should be interfered with and subjected to reformatory treatment, *i. e.*, whether boys should be committed to a Reformatory for a first offence, or whether this special and expensive machinery should be reserved for habitual offenders, or how far a mean course should be adopted. I have already read to you Lord Northbrook's remarks on this subject; and I cannot do better now than add the recommendation of the Prison Conference that met in this city last year. "We would submit," they say, "that confirmed and hardened offenders and boys convicted of certain crimes should not be sent to Reformatories, since they would be likely to contaminate others; that, on the other hand, if boys are sent to Reformatories indiscriminately on first conviction, and before they can be called hardened offenders, the schools will be crowded; we shall fling away the chance—a very considerable one—that the first conviction may deter, and we shall take an unnecessarily large number of boys from their parents' care. It will be for the Magistrate to steer between these two dangers, and though we think it most necessary that he should be told pre-

cisely what the dangers are which he has to guard against, we doubt whether anything more can be done to assist him. * * * We believe that Magistrates should chiefly look to the boy's surroundings. Has he parents who will take reasonable care of him? If he has, then there ought to be very special reasons to justify a Magistrate in sending him to a Reformatory on a first conviction. If, on the other hand, he is friendless, or his parents and associates are themselves criminals, then there should be special reasons if a boy is not sent to a Reformatory."

It appears that of 1,210 children committed to Reformatory Schools in England and Wales during the year ended 29th September 1876, 672, or rather more than half had not been previously convicted, 381 had been convicted once before, 111 twice before, and only 16 more than twice. Of the 1,210 children, 262 are said to have been bereft of parental control.

I shall next draw your attention to two important questions—the age at which boys should be sent to Reformatory Schools and the period that should be fixed for their detention.

It is obvious that if a boy is to derive any benefit from the discipline of a Reformatory School, he must be subjected to that discipline for a sufficiently long period that it may make a lasting impression on his character. The Act, following the English Statute, has fixed two years as the minimum period for which a boy may be sent to a Reformatory School. But this period will in most cases prove too short to effect any radical change in a depraved boy's character. "We hold unanimously," wrote Mr. Heeley's Committee, "that nothing short of a confinement of three or four years will suffice to eradicate the seeds of vice implanted so early in our juvenile criminals, and to replace them by those dispositions which fit a boy to become a decent and orderly member of society." And this opinion is entirely in accordance with that of the Managers of such institutions in England. Thus the Committee of the Red Hill School strongly recommend that "in every case * * * the sentence of detention should not be less than four years, except when the age exceeds 15, (or at least 14). * * * As a general rule, reformatory training can scarcely produce a permanent effect in a less period than three years. The Committee strongly urge the expediency of giving the full sentence of five years in all ordinary cases." So, in Miss Carpenter's Reformatory at Bristol "it is desired that the sentence of detention should extend to five years." And in practice I find that these principles are generally acted on in England. Of the 1,210 boys committed in 1876, 41 were sentenced to be detained

for 2 years, 144 for 3 years, 239 for 4 years, and 786 (*i. e.*, nearly two-thirds) for 5 years.

It is clear, however, that the period of detention must depend to some extent upon the age of the boy concerned at the time of commitment. It might be argued that the younger the boy, the more impressionable his character, and therefore the less necessity for a long period of detention. But what has to be considered is, the chance of the boy relapsing into crime if discharged before he is able to stand alone, or before he has acquired sufficient stability of character to enable him to resist temptation. And accordingly the Supreme Government has wisely, as I think, approved these principles in the rules that have been prescribed under the Act, by which the minimum period of detention is fixed at five years in the case of a boy under ten, and at three years in the case of a boy over that age—an additional term of two years being added in each case under certain special circumstances therein laid down.

What, then, is the *minimum* age at which boys should be sent to a Reformatory? No minimum is laid down in the Indian Act, but a practical minimum is contained in that Section of the Penal Code which provides that nothing is an offence which is done by a child under seven years of age. The English Act, however, prescribes that boys under 10 shall not be committed to a Reformatory School unless they have previously been charged with a crime or offence punishable with penal servitude or imprisonment, or sentenced by a Judge of Assize or Court of Session. And the Committee of the Red Hill Reformatory particularly "request that no boy under 12 years of age be sent for detention in the school, nor any boy on first conviction, unless the case appears a very special one indeed." In 1875 the Home Secretary proposed to raise the minimum age in the case of first convictions from 10 to 12 or 13; but the Committee were of opinion that, so long as the Managers of Reformatory Schools were allowed to retain the power of rejecting unsuitable cases, no change in the law was called for. As a rule they admitted that children under 12 should not be committed, but, as they pointed out, special cases do occur now and then in which a Reformatory supplies the only adequate treatment. Out of 436 boys admitted to Red Hill during the previous five years, only 21 boys who had not been previously convicted were under 12 at the time of commitment, and these, they pointed out, were all fit and proper cases. Industrial Schools, as you are probably aware, are intended for a younger and less criminal class of children, yet the tendency of English legislation on this point is manifest from the Statute relating to the Middlesex Industrial School (38 and 39 Vic.

c. 187) which was passed in 1875 and is, I believe, the most recent legislation on the subject, and which lays down that 10 shall be the minimum age at which a child shall be committed to the School.

The *maximum* age has been fixed by the Act at 16 years. In Sir Alexander Arbuthnot's Bill the maximum was originally put at 14 years, but with reference to Section 318 of the Code of Criminal Procedure the limit was subsequently raised to 16. I think this alteration is to be regretted. It is true that 16 is the maximum age under the English Statute, and that this age is also in accordance with the French Penal Code. But on the other hand, it must be borne in mind that by the English Statute a boy may be detained up to the age of 21, whereas under the Indian Act he cannot be detained after he has attained 18. Moreover youths arrive at maturity at an earlier age in this country, and by Section 83 of the Penal Code we have seen that the age of discretion, which English criminal law places at 14 and French criminal law at 16, is for India placed at 12. Accordingly when, as Inspector General of Prisons in Bengal, I submitted proposals for rules under Section 22 of the Act, I ventured to suggest that "it should be pointed out to Judges and Magistrates that boys as they approach the age of 16 become daily less fit subjects for a Reformatory, and that it is doubtful whether any boy over the age of 14 should be sent to the school. This objection, I remarked, applied with special force in the case of habitual offenders who, at the age of 16, are often old in vice and in no way amenable to reforming influences." A similar suggestion was made by Mr. J. D. Gordon, the Judicial Commissioner of Mysore, who wrote as follows:—

"Considering the early development of the native mind, whether for good or evil, reformatory training cannot have much influence on youths of 14 and upwards, especially if they happen to have inherited criminal propensities from their parents, as is the case with many of the criminal tribes. I would therefore make juvenile offenders of 14 and upwards pass a small portion of their stay in the school in a penal stage, or, if this is not practicable, I would exclude them altogether from the benefits of reformatory training."

The Government of India, however, were not inclined to go so far. "One of the main objects of a Reformatory," writes Mr. Howell, "is to prevent the contamination of youthful offenders by their association with the inmates of a jail, and it may not unfrequently happen that from this point of view the benefit of a Reformatory would be as important in the case of a boy of 14 as in the case of a boy of 10. Should any caution be conveyed to Ma-

gistrates and Judges, it should be confined to the cases of hardened offenders as shown by repeated convictions or of boys convicted of crimes arguing great natural depravity." With all due respect, however, I would submit that a reformatory school is not to be confounded with the juvenile ward of a prison, and that juvenile criminals, whether under or over 14, should not be sent to a reformatory unless there is actually something in their case which calls for reformatory treatment. I may also mention in this place that my view is borne out by the Managers of many Reformatories in England. Thus, Miss Carpenter's Reformatory at Bristol declines to receive girls over 14, and the Adel Reformatory near Leeds (with which I am personally acquainted), will not receive boys over 15.

To sum up, I venture now to lay before you for your consideration the following principles which appear to follow from what has been said :—

I. That the most proper subjects for Reformatory treatment are those boys who are without proper parental control, and who have committed offences against property.

II. That, as a rule, no boy under 10 years of age should be sent to a Reformatory School on a first conviction, unless he belongs to one of the criminal castes and is clearly being trained up to crime.

III. That, except for special reasons, no boy over 14 should be sent to a Reformatory School.

IV. That habitual juvenile offenders ought to be committed at an early stage of their career, being less amenable to reformatory discipline as they approach the age of 16.

V. That the period of detention should not be less than three years, and in the case of boys under 10 years of age, not less than five years.

VI. That in the case of boys who have been previously convicted, or who are clearly being trained in crime, the period of detention should be prolonged.

As I have already explained, the last two principles have already been affirmed by the Government of India.

In conclusion, I would desire to deprecate any hasty criticism of the experiment that is now being made at Alipore. I do so, because it is in many senses an entirely novel experiment. Not only is it the first institution of the kind that has been established on this side of India, but it differs from similar institutions in England (1) in being a State School, controlled and managed, more or less, by an official body, (2) in being necessarily located in the

Suburbs of the Metropolis instead of being placed in the free country air away from the temptations of city life, and (3) in its inability to make use of religious influences in aid of its reformatory discipline. In these, and perhaps in some other respects, I think it labours under serious disadvantages and is the more entitled to be judged with consideration and leniency. What I should like to see would be a Farm School started and managed by private benevolence,—situated in the open country, yet not out of reach of frequent official inspection. Such a school might combine the purposes of a Reformatory and of an experimental Agricultural School—so far at least that improved methods of agriculture might be introduced and taught to the lads. If the Alipore School is in any degree successful, let us hope that some of the rich and philanthropic leaders of the native community may come forward to establish a similar institution elsewhere under the conditions I have named.

(See next page.)

*Comparative Statement of Juvenile and Adult offenders committed to Prison in Great Britain
between the years 1861 and 1876.*

	ENGLAND AND WALES.					SCOTLAND.		TOTAL FOR GREAT BRITAIN.	
	Under 16.			Over 16.		Under 16.	Over 16.	Under 16.	Over 16.
	Male.	Female.	Both Sexes.	Male.	Female.				
Period from 1861 to 1876. (16 years.)									
Total Commitments of period,	124,582	19,894	144,476	1,522,104	611,989	2,134,093	17,884	444,433	162,360 2,578,526
Average per year,	7,786	1,243	9,029	95,131	38,249	133,381	1,118	27,777	10,147 161,158
Commitments in first year,...	7,373	1,428	8,801	72,947	30,396	103,343	1,212	17,366	10,013 120,709
Ditto in last year,	6,232	906	7,138	116,735	50,425	167,160	1,068	42,800	8,206 209,960
Average of first 5 years,	7,509	1,312	8,821	83,224	31,992	115,216	1,097	21,017	9,918 136,233
Ditto last 5 years,	7,311	1,092	8,403	104,116	46,691	150,807	1,129	36,457	9,532 187,264

Remarks. This Table shows that while the adult commitments in 1876 as compared with those of 1861 show an increase of 74 per cent., the commitments of juveniles show a decrease of 18 per cent. Or, if we compare the average of the first five years of the period (1861—1865) with that of the last five years (1872—1876) we see that adult commitments have increased by 37 per cent., while juvenile commitments have fallen off by 4 per cent. In other words, judged by a comparison with adult crime, the working of Reformatory and Industrial Schools seems to have resulted in a considerable diminution in the number of juvenile commitments to prison. Of course it may be said that this result is to some extent brought about by the numbers at present in these schools; but that the result is not far wide of the truth is shown by the statistics of the schools themselves. Thus in 1867, 270 children were sentenced by Session and Assize Courts to be sent to a Reformatory, whereas in 1876 only 145 children were so sentenced. In the five years 1867-71, a total of 1,167 children were so sentenced, giving an average of 233 per annum. In 1872-76 only 897 children were so sentenced, yielding an average of 179 per annum. Similarly the figures show a decrease in the number of re-convictions. Of the juveniles sent to Reformatories in 1868-9, 50·7 per cent. had been previously convicted; of those sent in 1875-6 only 41·5 per cent. had been re-convicted. Indeed in 1876, Mr. Sydney Turner was able to report as follows:—"It is tolerably certain that no more Reformatory Schools will be required; probably indeed some few of those now certified may be dispensed with, if in a future amendment of the Act the usual age for admission to a Reformatory on a first summary conviction is raised to 12." And in 1877 his successor, Mr. Inglis, writes:—"The existing number of Reformatory Schools seems fully sufficient for the requirements of the country. In many the numbers under detention have been decreasing owing to the decrease of juvenile crime, which may fairly be attributed in a great measure to the action of the Industrial Schools which catch so many of the children before they have time to qualify for a Reformatory. The probability is, that while the call for Industrial Schools seems steadily on the increase, we shall ere long see some of the Reformatories resigning their certificates for want of inmates."

In the Report of Miss Carpenter's Red Lodge Girls' Reformatory for 1865, I find the following:—"When our first attempts were made in 1853 to reform convicted girls, we had to deal with a class who formed organized gangs among themselves such as are described in "*Jane Cameron*", and who were regularly trained

thieves, who were hardened by being in jail six or eight times. Now we seldom meet with a second convicted girl, though we never decline any who are not above our age or penitentiary cases ; and no traces remain to our knowledge of gangs of girls who are regular thieves."

What effect Reformatories have had in checking adult crime, cannot easily be ascertained with any accuracy ; though it is clear that if a certain number of juveniles are reclaimed from a career of vice year after year, the ranks of habitual criminals must be proportionately reduced. And, as a matter of fact, we find that serious organized crime—especially offences against property—has considerably diminished in England during the last few years, as will appear from the following Table :

	Within the five years			
	1857-61	1862-6	1867-71	1871-6
Total number of persons committed for trial,	89,123	97,788	92,227	75,681
Average per year,	17,825	19,578	18,445	15,136
Of whom convicted, .....	....	....	68,479	56,609
Average per year, .....	....	....	13,696	11,322

At the conclusion of the lecture, the CHAIRMAN (Dr. K. McLEOD) said :—We have listened with very great pleasure and profit to Mr. Beverley's paper on Reformatory Schools, a subject which is certainly one of deep social interest to everybody, natives as well as Europeans, in this country. He has raised several points permitting of discussion, and I hope that some members of the Association will now give us the benefit of their views on the general question, or on some of the special features of it to which Mr. Beverley has directed our attention.

BABU SRINATH GHOSE rose and spoke as follows:—I have very great pleasure in proposing a vote of thanks to the learned lecturer for the very excellent lecture he has just read to us on a very interesting subject. The subject of Reformatory Schools is a most important one. It is at present receiving considerable attention at the hands of Government, and it may be hoped that the Reformatory School which has just been established at Alipore will be the first of a number of such schools established in all parts of India. The value of these Reformatory Schools cannot be over-rated. Once these schools are established in the interior of districts, their effect upon crime cannot

but be marvellous. Under the operation of an efficient system of Reformatory Schools, crime will be repressed in the land as it were, and society incalculably benefited. I think the information which the learned lecturer has placed before us is undoubtedly valuable at the present day; and the views expressed may be accepted as sound and correct. The entire paper is well worthy of consideration and discussion at a Social Science Association meeting, and our best thanks are due to the learned lecturer for introducing the subject and reviewing it in the manner in which he has reviewed it.

MR. J. B. KNIGHT said :—In rising to second the vote of thanks which has been proposed, I have very little to say except to express the great interest with which I have heard the lecture delivered. The name of "Reformatory Schools" is a very attractive one, and the idea of reforming criminals is one which commends itself to every one. The difficulties with which the subject is surrounded appear to me to be very great, and my idea of these difficulties is not lessened by the paper which has been read to us. It makes me almost fancy that the experiment which is now being tried has been begun without due deliberation, as, although it has been under the consideration of the Government for a long time, still in one very important point it seems to me that an error has been committed, and that is in placing boys of too great an age in the school to begin with. In visiting the Reformatory the other day I saw amongst the forty or more boys that were there ten or twelve who exceeded the age suggested in the paper as the maximum age of admission. I should imagine that the boys there were of low development, except in the development of criminal thoughts. I saw boys who had been repeatedly imprisoned before, placed in the school and allowed to mix with many mere children and even among these children there were some with half a dozen rings on their wrists, every ring representing a previous conviction. No one can do otherwise than sympathise with this great attempt which is being made for the instruction of these boys in various industrial occupations. But here a difficulty arises—not that they are not sharp enough, but the difficulty is to find teachers for them. It was thought at one time that firms in Calcutta might send work to be done in the school, but this seems almost hopeless, the workmen being so wedded to their own ways. I hope some way may be devised to meet this difficulty so that the great object of the school may be attained, namely, to give these boys a trade by way of earning their own living by a useful handicraft, and so, if possible, save them from the evil influences with which their lives have hitherto been surrounded.

BABU ASHUTOSH BISWAS said :—Mr. Chairman, Ladies and Gentlemen, With great pleasure I rise to support the vote of thanks which has been so ably moved and seconded by the two speakers who have preceded me; and in doing so I feel it necessary to make some observations regarding a system of reclamation which has been introduced in many countries of Europe, and which the experience of those countries has of late taught our rulers to experiment with in this land of ours. At this advanced hour of the day, and when the rules of this Association place ten minutes' time only at the disposal of a speaker, I do not think it advisable to comment on the merits of the lecture at length, but will content myself with making some cursory remarks on certain points that have not been touched either by the lecturer or by the speakers.

When I reflected upon the criminal lists published every year under the auspices of our local Government, when I reflected upon the figures in those lists (the list for the year 1872 showed only 327 juvenile offenders under 16 years of age, and in the two subsequent years the number appears to have risen

to 548 and 537 respectively), I rejoiced within myself that juvenile crime in India was very little. But, along with this, two questions at once presented themselves to my mind for solution. First, whether or how far it was practicable to form classes with such a small number, and that number scattered all over the province. This question has to a very great extent been answered by the Reformatory which was opened the other day at Alipore. But there still remains the other question, whether reformatory institutions ought to be established and maintained as State schools or whether they ought to be established and maintained by voluntary subscriptions. In approaching this question it must be distinctly borne in mind that at present whatever may be spent upon them will be so much money withdrawn from other purposes for which we may be called upon to contribute in some shape or other. It must also be remembered that the financial condition of the empire is anything but satisfactory, it is both embarrassed and anomalous, the pressure already existing upon the revenue is hundred-headed, and I fear to add one head more to it; it would be to make the anomaly more anomalous. I should therefore like to see that the reformatory institutions here are not made so many burdens upon the State, but are maintained by voluntary subscriptions. It may be asked—Can we hope to raise a respectable sum by private subscriptions? To this I answer—Yes. We may be impervious to all arguments in favor of taxation; we may grudge paying a pice to the tax-gatherer; but we never grudge to make private contributions. You all know that a spirit of philanthropy, a disinterested benevolence, forms the palladium of our moral character, and there can, I say, be no difficulty in raising a respectable sum by private subscriptions amongst a people so generous and benevolent. Let the local authorities appeal to the generous instincts of the people, call upon them to contribute as much as their means will permit towards the maintenance of their reformatories, and I assure them of a prompt, sympathetic, and cordial response to that call. Gentlemen, I should be greatly mistaken about the character of my countrymen,—of those whose forefathers sent forth their Buddhist missionaries on their errands of duty and philanthropy, of those who have assembled within these walls to-day, if I could not assure them of such a ready response.

Again, while upon the question of finance, I must not forget to tell you that the law, as it had been originally proposed, contained some enabling provisions. It enabled the municipalities to establish or to contribute to the cost of reformatories. It enabled the Government to charge the cost or a portion of the cost of these institutions to the parents of the children brought under their ameliorating influences. None of these provisions have found place in the Act. The excision of the first I do not regret at all, for I have protested on more than one occasion against the use of municipal money for educational purposes, while the more legitimate purposes of health and conservancy remain unaccomplished. But I sincerely regret the excision of the second set of provisions, and I regret it all the more because it has been justified with arguments borrowed from false analogy. At this advanced hour I need not state those arguments in detail nor cut open the fallacy which underlies them. Suffice it to answer them by stating to you that similar provisions do still exist in the English statute, upon the basis of which the present law stands. There is also a middle course open to us;—a reconciliation is possible between those who opposed these provisions, and ourselves who would like to retain them. Dividing the whole period of detention into two parts, one of which you may call the imprisonment term, and the other the non-imprisonment term, the Government can in all fairness charge the cost of maintenance of the detained during the

latter term to their parents while excusing them from maintaining them for the former term. Perhaps I am not clear. Let me suppose an example and illustrate my meaning. Suppose a youth of 11 is sentenced to one year's imprisonment under a certain section of the Criminal Code, and that instead of being sent to prison he is admitted into a reformatory where he is detained say for 4 years. One of these four years I call the imprisonment term and the other three the non-imprisonment term, during which I say the Government can justly call upon his parents to maintain him. I say, then, that we must have a separate distinct Reformatory Fund, and that the fund must be raised and fed by voluntary subscriptions and contributions from parents.

Here I beg to put forth another suggestion. I should like to see that a portion of this fund is devoted to giving to those who are discharged and who are certified as worthy of the favour, *bonuses or gifts*, in order to enable them to set out on their newly learned career of industry and honesty. I make this suggestion because who knows that, if thrown upon society without capital to start with, but with increased ambition, these discharged youths will not resort to wicked or foul means for raising the necessary capital. I do not claim any originality for this suggestion, but I have borrowed it from certain English statutes regulating a similar institution in England.

One word more and I have done. The law, as it was originally laid down in the Bill, contained provisions for two classes of persons,--for youths who have wrecked their character and become the frightful scourge of society, as well as for youths who have no ostensible means of living and are suspected of leading bad lives. But the ameliorating influences of the "Reformatory Schools Act" have been confined to the former. In England you know, as has been said by the learned lecturer, there are distinct organisations known as industrial schools where the latter class of youths are drilled and provided for. And this is the reason why the reformatory schools there are confined to juvenile offenders alone. But in our country we have not got such drilling institutions as the industrial schools of England. Why then, I ask, should the doors of our reformatories be opened to the one and shut against the other who may prove to be equally dangerous to society? I say, then, let those youths who commit crimes and those who have no ostensible means of living, both be drilled together under the roof of one common reformatory; let its ameliorating influences be shared equally by the two. As the Act at present stands, it fulfils half its objects, satisfies half its ends, shoots half its mark. I can conceive of no arguments against the extending the sphere of action of our reformatory schools. The arguments which were urged against it in the Council smacked too much of sentimentalism; they are too vague, too flimsy to be discussed at length to this meeting specially at this late hour. With these suggestions, I support the vote of thanks with very great pleasure.

MR. BEVERLEY said:—I have only a few remarks to make in reply. I should like to correct in the first instance, a false impression which may be inferred from the remarks of the last speaker as regards the manner in which the boys should be disposed of when discharged from Reformatory Schools. The Act provides that, after detention for a certain time, the managers should use their best endeavours to get the boys licensed out prior to their final discharge; and probably before that time arrives they will all be in suitable places of employment either in Government workshops or elsewhere. I may also state, that besides these provisions of the law, the rules which have been drawn up for the management of these reformatories, provide that boys may be allowed certain earnings or rewards which will be put by to form a small fund which will be

made over to them on discharge. With regard to the establishment of industrial schools, I think the last speaker was somewhat inconsistent, for almost in the same breath he complained of the cost of Reformatories being thrown upon the Government, and at the same time desired to see the Government establish a second set of schools. As he correctly stated, the original Bill contained provisions regarding boys of bad character, who, however, had not been convicted of crime; and the main reason why these provisions were struck out was the enormous expense that would have to be incurred if the Government took upon itself the cost of maintaining and training all the bad and destitute boys that might be found in the country. It was therefore thought convenient at first to introduce provisions similar to those contained in the English Act for reformatories only, leaving the establishment of industrial schools to some future time when they may be established and maintained by the help of private exertions.

THE CHAIRMAN (DR. McLEOD), in winding up the proceedings, said:—I have much pleasure in conveying the very best thanks of this meeting to Mr. Beverley for the most interesting paper he has read, and which has, I confess, given rise to more discussion than I expected. I thought that, as the subject was still very young in India, as the reasons which have led to the establishment of reformatory schools in other countries have not been very prominently before the public in this country; as the grounds for trying the experiment in India have not been the subject of popular agitation or controversy; as the experiment itself is in a very early stage and information regarding its working and success necessarily scanty,—very few members of this Association could have formed very definite opinions on the matter. But I have been pleasantly disappointed. I find from the remarks which have been made that the subject has given rise to thought which, at least in the case of one speaker, has resulted in very pronounced views.

The essence of the case appears to me to be this:—That in essaying to establish reformatory schools in this country, the State has simply furnished another instance of the need which arises for its occasional assumption of a paternal or parental responsibility, a responsibility which it assumes in this case only where parents are manifestly unfitted for the discharge of their parental functions; when children either have no parents to guide them, or, if they have are better apart from than with them. In countries more advanced in political and social education than India, public opinion has such a powerful, intelligent and humane influence, that this and other matters affecting social well-being may safely be left to the operation of social as distinguished from political forces and agencies. In this country all political and most social movements centre in the Government. The Government embodies almost exclusively social and political thought and effort, and so it happens that enterprises which elsewhere are initiated and carried into effect by the people themselves under the sanction and approval of the legislature and governing power, are here originated and executed by the Government.

The speaker who contended that Reformatory Schools should rest upon non-official enterprise, management and support, has taken up what is theoretically a most excellent position. Perhaps with the progress of civilization and social development in this country, the public feeling and agency of the intelligent and advanced classes may relieve the Government of the duty and task of reforming juvenile criminals. This were a highly desirable result, but I think the Government is very right in assuming as it does the responsibility and duty incumbent on the community in regard to juvenile offenders, and in giving the official classes and the substantial non-official classes a start in this

direction. I am sure we must agree with the speaker in hoping that in future it may be possible not only for these schools to be started and supported by non-official agencies, but to be managed, as in Europe, by non-official agencies under the guidance and subject to the criticism and control of an educated public feeling and opinion. The same speaker argued, as I understood him, that Reformatory Schools are not needed in this country, as juvenile criminals form so small a part of the total prison population. I think that the paucity of youthful offenders against law is a legitimate subject for congratulation, but it does not follow that, because juvenile offenders are comparatively few, therefore no effort should be made to reform them. Everything in this country is apt to come under the great and dominant law of custom, and to organize itself into the class habit; and crime is no exception. Thuggee and dacoity are the most conspicuous illustrations of this tendency as regards criminal practices, and, as Mr. Beverley has pointed out, the reformatory and industrial idea has been successfully applied to the former. When parental influences acting on the youth of any class are influences perpetuating criminal propensities and practices, the sooner the State or the public steps into the place of the parent the better, however few or many the number requiring this interference. Another speaker has alluded to the value and the difficulty of applying industry as a reforming agent in these schools. You are aware that this element has always constituted a prominent feature of prison administration in India. One of the most able and energetic of prison administrators in this presidency, Dr. F. J. Mouat, made this a very strong point in his management of jails; and certainly in combination with classification,—the segregation of the habitually criminal from the accidentally or casually criminal—it offers the most powerful means at the disposal of prison officials of reforming the bad and preventing the comparatively good from lapsing into deeper degradation or vice. It is a matter of regret that industrial and other reformatory influences cannot be dissociated from the demoralising surroundings supplied by a jail; but the subject is a very difficult one, and it is only in the case of juveniles, and only partially with them, that reformatory detention can as yet be substituted for punitive incarceration. I quite agree in the opinion which has been expressed as regards the question of age. I think that in this country people age prematurely as compared with Europe; and that the limit of age ought therefore to be below the English limit. Children become boys, and boys men, earlier in India than in England, and these changes imply the earlier formation and fixation of character and habits. I will not tax your patience any longer, but I think the Association owes Mr. Beverley a debt of gratitude for the lecture he has given us, and I hope the next time we may have the subject before us we may be able to say something more definite about it, and congratulate ourselves upon the success of these Reformatory Schools.

3.—*On the Statistics and Causes of Suicide in India.*

By KENNETH MCLEOD, A. M., M. D.

[Read on the 13th June, 1878.]

Mr. Buckle has pointed out in the introduction to his *History of Civilization in England*, that, however much human events may appear to be, when viewed individually, the result of chance, or human actions the consequence of an exercise of freewill and choice, still in any community these events and actions will be found to repeat themselves in equal successive periods of time with wonderful regularity and in marvellous arithmetical similarity. He argues from this undoubted truth that men's lives and acts are the product of social forces which determine, irrespective of individual freewill, a certain number and kind of effects; that the apparent choice of the individual from conflicting motives is but the last link of a chain of causes which encircles human beings and inevitably binds them to certain courses of conduct, and that from these circumstances history ought to become an exact study, capable of cultivation by statistical methods; the regularly recurring events being used as a series of social constants from which to deduce settled and permanent social laws. It would be easy to illustrate this position by examples and to give instances of the method of study. Men do the same things in the same way from year to year, are born, marry and die in very similar numbers, commit the same kinds of crimes to the same extent, nay, commit similar acts of thoughtlessness and inadvertence with amazing regularity. Thus, a certain number of persons are found to forget to address their letters every year and to drop them into the letter-box with blank covers, and the number of those who commit this act of absurdity varies little from year to year. In some cases the reason of the regularity of recurrence is very apparent. For example, I have extracted from the Report of the Registrar-General of

England for the year 1872 a return* showing the number of deaths in the streets of London caused by horses and vehicles during the 5 years 1869-1873. The totals for the five years are—192, 198, 208, 213, 217—progressively increasing with a growing population, and varying only to the extent of 25 or 12 per cent. of the average. When the numbers are calculated on a million of inhabitants the figures are,—58·9, 59·8, 61·9 62·6 and 61·8, the fluctuation now amounting to only 6 per cent. of the average. This is a very simple case. We have from year to year very much the same number of streets, persons, horses and vehicles doing very much the same kind of work; but when we take such data as marriages, murders, forgeries, the uniformity is more remarkable and its causes more difficult to trace. The truth of Mr. Buckle's principle is further proved by the fact that fluctuations in the social conditions of a community cause fluctuations in its social events. Thus, marriages have been shown to "bear a fixed and definite relation to the price of corn," and the disturbances of social harmony and the rhythm of social phenomena caused by such political convulsions as the French Revolution and the Indian Sepoy Mutiny are too well known to require detailed illustration. Mr. Buckle derives his strongest example of the law of social constants from the subject of our present discussion. "Among public and registered crimes," he writes, "there is none which seems so completely dependent on the individual as suicide. Attempts to murder or to

* Deaths in the streets of London caused by horses and vehicles in the 5 years 1869-73.

Years.	VEHICLES.									Deaths by horses and vehicles	Ratio per million of estimated population.
	Horses.	Carriages.	Omnibuses.	Tram cars.	Cabs.	Van wag-gons.	Drays.	Carts.	Others.		
1869	10	6	18	..	26	56	3	70	..	192	58·9
1870	10	12	20	..	29	63	8	51	5	198	59·8
1871	9	12	20	..	23	74	4	60	6	208	61·9
1872	8	15	24	..	24	82	7	52	1	213	62·6
1873	13	10	12	17	28	75	4	56	2	217	61·8
	50	55	94	17	130	353	26	289	14	5)1028	)305 0
										205	61

Report of Registrar-General for 1873.

rob may be, and constantly are, successfully resisted; baffled sometimes by the party attacked, sometimes by the officers of justice. But an attempt to commit suicide is much less liable to interruption. The man who is determined to kill himself is not prevented at the last moment by the struggles of an enemy, and, as he can easily guard against the interference of the civil power, his act becomes as it were isolated; it is cut off from foreign disturbances, and seems more clearly the product of his own volition than any other offence could possibly be. We may also add that, unlike crimes in general, it is rarely caused by the instigation of confederates; so that men, not being goaded into it by their companions, are uninfluenced by one great class of external associations which might hamper what is termed the freedom of their will. It may, therefore, very naturally be thought impracticable to refer suicide to general principles, or to detect anything like regularity in an offence which is so eccentric, so solitary, so impossible to control by legislation, and which the most vigilant police can do nothing to diminish. There is another obstacle that impedes our view; that is, that even the best evidence respecting suicide must always be very imperfect. In cases of drowning for example, deaths are liable to be returned as suicides which are accidental, while on the other hand some are called accidental which are voluntary. Thus it is that self-murder seems to be not only capricious and uncontrollable, but also very obscure in regard to proof; so that, on all these grounds, it might be reasonable to despair of ever tracing it to those general causes by which it is produced. These being the peculiarities of this singular crime, it is surely an astonishing fact that all the evidence we possess respecting it points to one great conclusion, and can leave no doubt on our minds that suicide is merely the product of the general condition of society, and that the individual felon only carries into effect what is a necessary consequence of preceding circumstances. In a given state of society a certain number of persons must put an end to their own life. This is the general law; and the special question as to who shall commit the crime depends of course upon special laws; which, however, in their total action must obey the large social law to which they are all subordinate." The statistics collected by the Registrar-General of England fully confirm Mr. Buckle's statement. I find that taking a series of 17 years (1859-75), the lowest number of suicides per million of the population of England and Wales was 62, and the highest 73, the numbers following each other thus,—64, 70, 68, 65, 66, 64, 67, 64, 62, 70, 73, 70, 66, 66, 65, 68, and 67. "The

number of suicides to be committed next year," writes Dr. Farr in commenting on the mortuary returns for 1875, "can be predicted with much greater certainty than the rainfall." Here, then, we possess a social constant of remarkable interest depending on some constant state of the individuals composing a community, and on some constant influences by which they are surrounded, which offers a singularly appropriate gauge of the social condition of the community and its component units. I have thought that I might render a useful service to this Society and to social science generally by collecting all the available statistics on the subject of suicide in India, and endeavouring to place my finger on the influences, the social weaknesses, to which this crime—so opposed to the strongest instincts of human beings, so isolated and apparently autogenous—is due. I have accordingly searched published returns and books, and applied for information to Sanitary Commissioners, Police Officers and others,* with the result that I have been enabled to compile a very complete series of tables which I place at the disposal of the Society. I have selected the five years 1872-76 and tabulated the figures rendered by these for several reasons. In the first place they render more accurate figures, because the estimates of population furnished by the census of 1872 are the most correct which have hitherto been obtained, and mortuary registration has been more carefully conducted within recent years. In the second place, I have been enabled to present a series of years, which will illustrate the existence or otherwise of an element of constancy or constant repetition in this matter. Thirdly, the period embraced by the figures—a quinquenniad—is a convenient period for future comparison, and excludes the risk of presenting the exceptional results which shorter periods sometimes disclose; and, fourthly, the term of years selected is sufficiently recent to entitle the results to

* My acknowledgements for aid willingly rendered are specially due to the following gentlemen:—

Surgeon Major W. R. Cornish, Sanitary Commissioner, Madras.
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 Surgeon Major J. B. Lyon, F. C. S., Chemical Analyser, Bombay.
 Moulvi Abdool Luteef, Khan Bahadoor.
 Rev. K. M. Banerjia, LL. D.
 W. D. Pratt, Esq., Personal Assistant, Inspector-General of Police, L. P.
 T. G. Weir, Esq., Health Officer, Bombay.
 H. Stanborough, Esq., Coroner of Madras.
 Major T. K. Guthrie, Assistant Inspector-General of Police, Madras.
 Surgeon Major A. J. Payne, M. D., Health Officer of Calcutta.
 J. Lambert, Esq., Deputy Commissioner of Police, Calcutta
 Col. E. Tyrwhitt, Inspector-General of Police, N. W. Provinces and Oudh.
 A. Vincent, Esq., Acting Commissioner of Police, Bombay.

be viewed with the special interest appertaining to contemporary history.

Death-registration is still very imperfect in India, and I would not ask you to accept these figures as perfectly accurate; still, I believe that returns referring to so striking a matter as self-murder are more likely to be correct than general mortuary returns, and, such as they are, the figures are the best—the only figures—obtainable. The tables refer to the three Presidencies and embrace all the towns and districts included in them with the exception of Assam, Burmah, Hyderabad and Native States. The particular points illustrated by them are—1st, The number of deaths by suicide which occur annually and their relation to population. 2nd, The proportions of the sexes displayed by the returns. 3rd, The methods of committing suicide adopted in different parts of India; and, 4th, the number of suicidal deaths which occur in different months and seasons. I should have wished to be able to present some statistical information regarding age, race, caste, education, employment and other social conditions such as marriage, but I have only been able to collect a few scraps.

I shall now proceed to relate in general terms the conclusions deducible from these tables arranged as I have now indicated, and shall then endeavour to lay before you some considerations regarding the causes, physical and moral, which appear to determine the crime of suicide in this country, and to offer some suggestions derived therefrom regarding social reformation.

1. *Number of Suicides.*—You will observe from the summary table which I exhibit (No. 20) that the number of deaths by suicide registered in different Provinces and Presidencies varies very considerably, ranging from 12·7 per million in the Punjab to 70·5 in the Central Provinces.* These are the mean rates of the quinquennial and for the whole area and population of the Presidency or Province. If we take the mean death-rate from all causes rendered by the mortuary statistics of the same years, there can be no doubt that registration is very defective. Whether the registration of suicidal deaths is as defective as that of deaths from all causes is open to question. The numbers are undoubtedly considerably below the truth. This is proved in the case of Bengal by the results shown by selected areas in which special pains

* The following figures, indicating the rates per million of population of suicide in the various countries of Europe, are quoted from the *Revue de France* :—Saxe Altenberg, 303; Denmark, 288; Saxony, 251; Sleswig, 209; Holstein, 173; Mecklenburgh, 159; Lanenberg, 156; Odenburg, 155; Hanover, 120; Prussia, 123; France, 40; Baden, 309; Norway, 94; Bavaria, 75; England, 69; Sweden, 66; Belgium, 55; Austria, 43; Scotland, 35; Spain, 14.

were taken to obtain correct returns ; for, while the mean rate for the Province is only 31·3 per million (table No. 2) the rate rendered by these areas is 47·5 (table No. 3).

I have placed the general death-rate of the period in each table, and it will serve as some indication of the accuracy of the return of suicides. But, whether the suicidal rate of any Presidency or Province is high or low, you will observe by examining the detailed tables that there is comparatively little fluctuation from year to year. Whatever the figure may be, it is repeated with very slight variation ; so that each of the areas comprised in these tables has a characteristic quinquennial index which the experience of each year of the period closely approximates. While the figure for the whole area presents this evidence of constancy, we find on analysing the district returns of each Province that there is a very wide difference in the rates rendered by these, some districts exhibiting high rates and others low rates. In this respect also there is a serial uniformity, for we further find that the high or low rates of any year of the series are repeated with remarkable fidelity in the other years.

I have thus been enabled to select in each Province certain districts in which suicides are remarkably frequent. I have taken five of these and noted the mean result of the quinquenniad in each case. The detailed figures of the five years fully illustrate the law of uniformity exhibited by the provincial results. There are, then, in each Province a certain number of districts in which the propensity to self-murder is specially conspicuous. Why it is so, I am unable to say ; but the facts are as I have represented them, and I must leave the reasons for the excess for future investigation. It would occupy too much time to go through the figures of the various Provinces in detail, and I will content myself by referring to those of the Province of Bengal in which we are most interested.

It appears that suicide is more rife in certain districts of Behar and Orissa than in any other part of the Province ; the figures rendered by some districts of Central Bengal—Nuddea, Jessore and Howrah for example—coming nearest to these. Colonel J. R. Pughe, the Inspector-General of Police, in his report for the year 1872, exhibits suicidal deaths in Bengal according to divisions. The Presidency division comes first with 371 deaths, (56·7 per million of population) ; Patna next with 316, (24·1) ; Rajshahye follows with 215, (25·3) ; Orissa has 207, (48) ; Dacca 202, (21·2) ; Burdwan 199, (27·3) ; and the remaining five divisions of the Province render less than 100 each (Chota Nagpore 97, Bhaugulpore 47, Chittagong 29

and Cooch Behar 13). These are the figures of one year ; but they give a general confirmation to the conclusion above stated. The five districts which I have found to exceed all others in this respect, are : Pooree, Cuttack, Nuddea, Patna and Gya. They give a mean rate per million of 66·4, and individually exhibit rates of 100·7, 85·2, 71, 56·7 and 49·5. The same inequality of incidence obtains in all countries. It has been found in England that the counties of Middlesex and Westmorland return an excess of suicidal deaths as compared with others. It would be of profound interest to ascertain why these differences exist, but the inquiry is obviously a most difficult one and would necessitate a special investigation. Imitation and social habit, no doubt, account partly for the result, but the real reason must be sought deeply in the social circumstances of these localities as compared with others.

Another striking fact indicated by the statistics is, that more suicides occur in towns than in country places. London has a suicidal rate of 82·8 against 66·2 for the whole of England and Wales ; Calcutta a rate of 77·6 against 31·3 for the Province of Bengal ; the town of Madras a rate of 94 against 65·6 the Presidency rate, and the town of Bombay 90·1 against 49 for the whole Presidency. The same result is apparent on comparing the statistics of smaller towns with those of the surrounding district. Thus in Bengal the mean rate for selected urban areas is 62·4, while that for rural areas is only 41·7. It is possible that registration is more perfect in towns where the population is more compact and the events more easily ascertained ; but there can be no question that more suicides do take place in towns, and the reason doubtless consists in the greater poverty and vice of towns and the stronger pressure of social influences, good or bad, on individuals.

2. *Age*.—I have found it impossible to obtain any information regarding the age at which suicides are most common. The facts are carefully recorded in England, where it is found that the majority of men commit suicide between the ages of 55 and 65, of women between 45 and 55. The numbers below 15 and above 80 are very small. I suspect that in this country the suicidal age would be found very considerably lower than in England ; I should say, judging from my experience in Jessore, between 25 and 35 or even earlier for women ; but there are no data available.* Col.

* Assistant-Surgeon Gooroo Doyal Doss Goopto found that in 18 cases of suicide (17 females and 1 male) examined at Tangail in the district of Mymensingh, 4

Pughe in the return which I have cited, notes 23 suicides by children (under 12 or 14 years I presume) among 1,716 at all ages, and the Inspector-General of Police, Oudh, gives 46 as the number of suicides by children against 4,172 by adults in the 7 years 1870-76.

3. *Ser.*—But the most striking fact in the statistics of self-murder in India is the excess of suicides committed by females as compared with males. There can be no doubt whatever regarding the reliability of the figures in this respect, for the whole tendency of statistics in India everywhere is to under-register vital events affecting females. This is conspicuous in census returns, and in birth and death statistics; and even as regards deaths caused by other descriptions of violence the same tendency is manifest. The excess of female suicides may therefore be accepted as an undoubted fact, and the figures probably rather fall short of the truth than otherwise.

I have shown in the summary table (No. 20) the relation which the rates per million of suicides among males and females hold, taking 100 males as the standard of comparison. The general result is, that, while in England the relation is 100 males to 33 or 34 females, in India the proportion is in round numbers as 100 to 150. In other words, for every 2 males who commit suicide, 3 females do so. The figures of different Provinces vary considerably, from 100 to 109 in the Madras Presidency, up to 100 to 258 in the North Western Provinces. The towns of Madras and Bombay give rather lower rates of female than male suicides. It is also observable that the districts which give higher suicide rates than the provincial average also give higher proportions of female suicides. This, further, confirms the general truth as to the greater tendency among females to commit suicide in India than among males.*

16 (15 females and 1 male) were below 25 years of age and only 2 females above 25. (*Indian Medical Gazette*, Vol. IX, page 179).

* Special observations in particular districts confirm these results.

Dr. W. B. Beaton in a "precis of medico-legal *post mortem* examinations made in the district of Dacca during the year 1865" found that of 41 cases of suicide, 27 were females and 14 males, 65·8 and 34·2 per cent. or 100 males to 193 females. (*Indian Medical Gazette*, Vol. I, page 837).

Mr. Vincent Richards found that of 75 *post mortem* examinations of cases of suicide made in the district of Bancoorah in the 10 years 1869-70, 42 were females and 33 males, 56 and 44 per cent. or 100 males to 127 females (*Indian Medical Gazette*, Vol. VI, page 232).

Assistant-Surgeon Gooroo Doyal Doss Goopto found that of 18 *post mortem* examinations made in cases of suicide at Tangail in the district of Mymensing in the year 1874-75, 17 were females and 1 male 94·4 and 6·6 per cent. or 100 males to 1700 females (*loc. cit.*).

Here, then, we possess a most important social fact, and one worthy of the very special attention of this Association. Whatever the causes are which determine people to put an end to their own existence in this country, they press more strongly upon the female section of the population than the male. This must be due to something special in females themselves as compared with males or to something special in the social influences acting upon them if they do not possess an inherent proneness to the crime. The weakness is either in the individuals themselves or their surroundings or perhaps in both. Wherever the truth lies, and we shall endeavour to throw some light on the question in discussing causes, the matter is one deserving of, nay demanding, very special and anxious thought.

1. *Modes of Committing Suicide.*—As regards the methods by which suicide is committed, there is this very conspicuous and remarkable fact, that, taking into account experience in every country, they are reducible to a very few categories. Hanging, drowning, poisoning, wounding (mostly by cutting the throat), and shooting, these five methods embrace about nine-tenths of the cases of self-murder all over the world.* In different nations and communities one or other method is apt to acquire prominence; but, whatever the peculiarity of any nation or community may be in this respect, it is apt to be perpetuated and repeated from year to year. Habit, imitation and suggestion are the three mental forces that determine this remarkable result, and the power of imitation and suggestion in this matter has been singularly exemplified. Thus, Dr. Forbes Winslow in his work on the *Anatomy of Suicide* mentions that a very singular case of suicide occurred in Paris. An individual prepared a net bag for himself and hung it outside his window; into this he descended head foremost and then cut his throat. The event caused a great sensation and was followed by many similar cases. The practice of committing suicide by means of the fumes of burning charcoal is another Parisian custom which also depends for its perpetuation on imitation and suggestion.

Dr. Carpenter in his interesting work on "*Mental Physiology*" mentions that, "after the suicide of Lord Castlereagh, a large number of persons destroyed themselves in a similar manner." In the

* Dr. Taylor in his *Principles and Practice of Medical Jurisprudence* (edition of 1865, p. 1038) states that the sight of a particular spot where suicide has been already committed will often induce a person who may hitherto not have been suspected of any such disposition, at once to destroy himself. Thus a second and third suicide took place from the monument near London Bridge soon after the first had occurred.

same work he relates a very remarkable instance of the power of suggestion in governing the will towards suicide. "Dr. Oppenheim of Hamburg, having received for dissection the body of a man who had committed suicide by cutting his own throat, but who had done this in such a manner that his death did not take place until after an interval of great suffering, jokingly remarked to his attendant:—'If you have any fancy to cut your throat, don't do it in such a bungling way as this; a little more to the left ear and you will cut the carotid artery.' The individual to whom this dangerous advice was addressed was a sober steady man with a family and comfortable subsistence; he had never manifested the slightest tendency to suicide, and had no notion to commit it, but, strange to say, the sight of the corpse and the observations made by Dr. O. suggested to his mind the idea of self-destruction, and this took such firm hold of him that he carried it into execution—fortunately, however, without duly profiting by the anatomical instructions he had received, for he did not cut the carotid but recovered."*

Another influence strongly determining the manner in which suicide is committed is opportunity. The propensity to self-murder existing, it is natural to suppose that the readiest means towards that end are employed. In the opium districts of Bengal, the North Western Provinces and Oudh, for example, opium is almost the only instrument of suicide. Where wells and tanks abound, these are adopted as the agents.† Elsewhere hanging is the predominant method. A Brahman has used his brahminical thread for suicide and a woman her long hair. But the most remarkable

* Another very similar instance is related by Dr. Taylor in his *Principles and Practice of Medical Jurisprudence* (edition of 1865, p. 1037). "Sir Charles Bell relates that one of the Surgeons of the Middlesex Hospital was in the habit of going every morning to be shaved by a barber in the neighbourhood, who was known as a steady industrious man. One morning the Surgeon was conversing with the barber about an attempt at suicide which had recently occurred, and the Surgeon observed that the man had not cut his throat in the right place. The barber then inquired, casually, where the cut should have been; the Surgeon pointed on his neck to the situation of the carotid artery. The barber in a few minutes retired to the back of his shop and then cut his throat with the razor with which he had been shaving the Surgeon; he had wounded the carotid artery in the place indicated by the Surgeon and died before any assistance could be rendered to him.

"Although this act was quite sudden and unexpected, it may have been only the final result of a delusion which had long existed concealed from others in the mind of this man—just as the sight of a weapon has often led to its use for the purpose of suicide."

† Suicide by drowning was at one time so common at Benares that the interference of Government was considered necessary to check the practice.—*Heber's Journey through India*, Vol. 1. pp. 389, 390. The custom of bathing evidently suggested the use of water as an agent of self-destruction.

illustration of the influence of opportunity is in the British Army. Suicide by gunshot accounts for 5 per cent. of suicidal deaths in England and Wales, but in the British Army the proportion is 53·2. The soldier finds his rifle the handiest weapon when the suicidal fit comes on him.

I have thrown the information which I have been able to ascertain on this subject into the form of a table (No. 21) in which the facts collected in this country are contrasted with those recorded in England. There hanging accounts for 27·8 per cent. of the cases, wounding (mostly cut throat) for 25·1, drowning for 22, poison for 10·8, gunshot for 5·9, and 8·4 cases per cent. come under the head "otherwise". Females are more prone to drowning, hanging and poisoning than men, among whom shooting and wounding are much more common. Now, taking Calcutta as a type of Bengal, for exact figures for the province are not available, poisoning and hanging are found to be most prominent (constituting 44·2 and 41·3 per cent. of the methods of suicide); drowning and wounding account for only a little over 5 per cent. each of the deaths, and gunshot for only 3·5. Hanging is more common among females, and drowning, poison, wounding and gunshot among males. Hanging and poisoning are in truth the two preponderating modes of self-murder in Bengal, but hanging is the custom of Bengal* and Orissa, poisoning by opium the custom of Behar. Opium and arsenic are almost the only two poisons used for this purpose, and the former is much more largely used than the latter. In the year 1870 I drew up a report on medico-legal returns collected in 1868 and 1869 by the medical department from all parts of the Bengal Presidency, which I subsequently published in 1875 under the title of *Medico-legal experience in the Bengal Presidency*. I found that of 104 cases of hanging 41 came in three months from Lower Bengal against 63 in 12 months from Upper and Central India; 26 of the 41 were females; they were all suicidal. The returns contained 15 cases of opium-poisoning, all or almost all suicidal; these came from Central and Upper India, only 4 of them from Lower Bengal; 28 of the subjects were females and 17 males. Dr. Robert Harvey subsequently drew up a report on the returns for the years 1870, 1871 and 1872 and his

* Dr. Beatson (*loc. cit.*) found that of the 41 cases hanging had been the mode of self-destruction adopted in 38 including all the females; of the remaining 3, 1 shot himself, 1 drowned himself and 1 poisoned himself with opium. Mr. Richards (*loc. cit.*) gives the following figures—of the 75 cases, 64 or 85·3 per cent. were by hanging, 9 or 12·10 per cent. by drowning and 2 or 2·67 per cent. by cut throat and poisoning.

Of Assistant-Surgeon Gooroo Doyal Doss Goopto's 18 cases 12 or 67 per cent. were by hanging.

testimony is more pointed and exact in the same direction. "Hanging", he writes (p. 210), "contributes 1,412 or $4\frac{1}{2}$ per cent. to the returns.....It must not be inferred from this, however, that it is a common mode of suicide throughout India. The distribution of the cases is very curious.....1102 cases, 78 per cent. of the whole, occurred in Lower Bengal excluding the Dinapore Circle (Behar, Chota Nagpore and Northern Bengal), leaving only 310 or almost 22 per cent. for all the other Provinces.....Females largely exceeded males, being 818 to 590, but this again is true only of the Lower Provinces where there were 677 females to 424 males." Elsewhere males were slightly in excess. There was every reason to believe that all the cases with very few exceptions were suicidal. As regards opium Dr. Harvey shows (p. 244) that the immense majority of cases came from Behar and the North Western Provinces, where 40·9 and 35·6 per cent. of all the cases of opium poisoning occurred. Dr. Harvey remarks (p. 215),—"It may be broadly said that opium-poisoning has no place as a national custom in Lower Bengal in the restricted sense in which the term is here used and, on the other hand, the Dinapore Circle (Behar) may be called its home. In the North-West Provinces and the Panjab it is very common, although only a third as frequent as in the Dinapore districts (Behar), while in Oudh and the Central Provinces it is comparatively infrequent, although five times more common there than in the Presidency and Dacca Circles.

• "Suicide is more prevalent in Bengal Proper than anywhere else, but the mode generally selected is strangulation by hanging. Habit and imitation must be the chief reasons now existing for this selection, but the habit probably arose when opium was more difficult to procure than at present. The Dinapore suicide is also influenced by custom, and the explanation of his almost uniform selection of opium to accomplish his purpose, is found in the fact that he has the poison ever ready to his hand, the poppy being largely cultivated over almost the whole district. This explains also the comparative frequency of opium-poisoning in the North-West, but as there are large tracts in the latter where no opium is grown, this particular mode of self-destruction is less uniformly used than in Dinapore. The comparative exemption of the Central Provinces, in the neighbourhood of which much fine opium is grown, probably depends partly on a less general readiness to suicide, but there is reason to believe that many cases are not reported, and that suicide by opium is more common there than is shewn by the returns."

I have been able to obtain no exact information regarding the North-Western Provinces, Oudh and the Central Provinces; but I

have tabulated the results of two years from the Report of the Punjab Sanitary Commissioner, which show that hanging still accounts for a majority of cases—48·1 per cent. ; but drowning is more prominent than in Lower Bengal—27·1 per cent. ; and poisoning less so—13·1 per cent. Females are more addicted to drowning and less so to poisoning and violence.

Turning now to Madras, the returns for the town show a remarkable excess of cases of drowning (78·1 per cent.) and a greater excess in this respect among females (93·7 per cent.) Hanging falls to 10 per cent. and poison to 5·3 and wounding to 4·8. These methods are much less frequent among females. The returns for the Presidency (for which I am indebted to Major T. K. Guthrie, Assistant Inspector-General of Police, Madras) give evidence to the same effect but hanging shows a larger figure—29·5 per cent. Females are still more prone to drowning than men. In the town of Bombay drowning is the most prominent item—48·5 per cent. ; poisoning comes next—31·5 per cent. ; hanging gives only 7·1 per cent. The figures for the Presidency are very similar to those of the Madras Presidency. Poison falls to 6·2 per cent. and violent methods are in both cases less common than in the towns. These facts are unfortunately very incomplete, but they are interesting as far as they go and illustrate the curious differences which obtain in different parts of the country regarding methods of self-destruction.

I regret that I have been unable to collect information regarding the races or castes most prone to suicide. Figures given in the report of the Sanitary Commissioner for Bengal for the year 1872 would indicate that the practice is more common in districts where the Hindoo element is predominant in the population.* In Calcutta I find that the figures which Dr. Payne was good enough to give me, indicate the following results: Suicides among Mahomedans constitute 45·4 per million of population, among Hindoos 85·4 and among other races 86·4. I would not build too much on figures of this kind, but the point is an important one and deserving of future study.†

* As regards class, the suicides were relatively as follows :—

	Per cent.
Districts containing less than 15 per cent. of Mahomedans	25·61
„ „ from 15 to 30	29·46
„ „ 30 to 45	18·57
„ „ 45 to 70	16·56
„ „ over 70	21·77

† In the five districts which are shown in table No. 4, the proportions of Hindoos and Mahomedans are as follows :—

I shall now proceed to discuss shortly the causes determining suicide in India. I shall consider these under the heads of physical and moral, the latter including religious and political as well as social and domestic influences.

1. *Climate and Season.*—Dr. Winslow has shown in the book to which I have already made reference that suicides are more frequent in England in Spring and Summer than in Autumn and Winter. Out of 133 cases, 19 took place in April, 17 in June, 17 in August, 15 in July, 14 in October, 13 in May, 10 in March, 9 in November, 6 in September, 5 in January, 5 in February and 3 in December. Of the whole number, 46 or 34·6 per cent. took place in the 6 months—January, February, March, October, November, December, and 87 or 65·4 in the 6 months from April to September inclusive. The result is a remarkable one, and contrary to what might have been anticipated. It were reasonable to suppose that the cold and gloom of winter would cause more physical distress and mental depression than the genial months of Spring, Summer, and early Autumn. But so it is. An elevated temperature appears to pre-dispose people to self-destruction and the epidemics of suicide that have been recorded have almost invariably taken place in June and July.* It is curious that the statistics which I have been able to collect on the subject in this country point to the same conclusion. I have thrown them into the form of a table (No. 22). They relate to the Province of Bengal, the North-Western Provinces and Punjab and the Bombay Presidency. In Bengal 38·3 per cent. of the suicides of 1877 occurred in the six cool months of the year, and 61·7 in the hot. In

			Hindoos.	Mahomedans.
Poorce	..	..	96 1	1·5
Cuttack	..	..	95·7	2 7
Nuddea	..	..	45 3	54·3
Patna	..	..	87·5	12·4
Gya	..	..	88·6	11·3

In Dacca the proportions are, Mahomedans 56·7 and Hindoos 42·8. Dr. Beatson's figures (*loc. cit.*) give Mahomedan suicides 51·2, Hindoo 48·8. In Mymensing Mahomedans constitute 64·7 per cent. of the population and Hindoos 34·8. Assistant-Surgeon Gooroo Doyal Doss (Goopto's figures (*loc. cit.*) give proportions of Mahomedans 66·7 and Hindoos 33·7.

In Bancoorah, Hindoos constitute 92·6 per cent. of population, and Mahomedans 26. Mr. Vincent Richards' figures (*loc cit.*) give ratios of Hindoos 96·2 and Mahomedans 3·8. He shows that the three castes of Teli, Goalla and Tamli give proportions of 22·03, 11·86, 10·18 of the whole number, but the ratios of these castes in the population are not given.

He states that none of his cases belonged to the Sonthal race of which there are a considerable number in the district.

* *The Medical Jurisprudence of Insanity.* By H. Balfour Browne, Esq. Barrister, p. 159.

the North-Western Provinces the results of 5 years, 1872-76, show 37·8 cases in the cool and 62·2 in the hot months; in the Punjab 38·5 and 61·5, and in the Bombay Presidency 47·5 and 52·5. These figures, recorded by numerous independent observers without any reference to this point, agree so closely that they unquestionably establish the influence of heat as a factor of suicide.* The comparatively cool month of August also shows a lower figure than those preceding and succeeding it in all the series. The highest rates are in the hottest months—April, May and June. On this principle we might expect a higher number of suicides in hot years as compared with cool years, but on this point I have not any evidence to offer.

2. *Famine* constitutes another physical condition which, in view of the distress and despair which it causes, might be expected to stimulate the suicidal propensity. Dr. W. R. Cornish, the Sanitary Commissioner for Madras, has informed me that the number of deaths by suicide in Madras in 1877 was 2,575, against an average of 1,970 for the five preceding years. "The explanation of that increase", Dr. Cornish adds, "is easy enough when we think of how many millions were pinched for daily food."

3. *Physical Suffering*. Akin to the effect of famine in causing mental depression and stimulating to suicide is the influence of physical suffering caused by bodily pain or disease. On this point there is a great deal of evidence. The fever months of September and October might naturally be expected to yield an excess of cases, and the table (No. 22) shows this to be true as far as September is concerned. This month yields a uniformly higher rate than August which, I have pointed out, indicates a very low figure, but in October the increase of cases is not sustained.

More satisfactory evidence exists regarding other kinds of physical suffering, more particularly abdominal pain. Dr. Chevers in his *Manual of Medical Jurisprudence* shows that the painful condition known as *pet sool* or *sool bedua* (belly-ache), due probably to bad food, is a very common cause of suicide in Bengal, more particularly among women. He gives a number of cases and quotations in support of his statement which I need not reproduce. He also states on the authority of Dr. Woodford "that worms, more particularly round worms or *lumbrici*, are often a cause of suicide on account of the permanent distress and discomfort which they occasion." In the report which I drew up in 1870 and to which I have already

* Mr. Vincent Richards gives figures pointing towards the same conclusion in a paper on "the influence of the seasons on Suicide" published in the *Indian Medical Gazette*, Vol. XII., p. 90.

alluded, I find that I have written thus (p. 99):—"Abdominal disease has a peculiarly depressing effect in the Lower Provinces; severe pain caused by bad rice, inflamed spleen, worms &c., is very often the evident motive to suicide." A number of cases are quoted in support of this statement. Mr. Vincent Richards, Civil Surgeon of Bancoorah, has given in the *Indian Medical Gazette* for November 1871, some particulars regarding *post-mortem* investigations made during the preceding 10 years. These included 75 cases of suicide, 42 of which were females and 33 males. "Physical suffering," he writes, "in the great majority of cases referable to the intestines, is a very constant cause of self-murder; of the 21 known causes, 19 or 90·48 per cent. were physical suffering and the remaining 2 or 9·52 per cent. jealousy, and distress consequent on litigation." He states that in one case the abdominal distress was caused by the presence of worms in the intestines. On this point more striking evidence is furnished by Assistant-Surgeon Gooroo Doyal Doss Goopto of Tangail in the Mymensingh district in the number of the *Indian Medical Gazette* for July 1874. During 17 months he had examined 18 cases of undoubted suicidal hanging; of these one was a male and 17 females. In only two cases did the age exceed 25 years, and round worms were found in the intestines of 12. The Assistant-Surgeon concludes his paper with the following remarks: "When the worms bring on much irritation, the nervous system becomes affected by reflex action, and so the sufferer turns feverish and low-spirited; consequently they can scarcely withstand a slight or trifling reprimand or any kind of correction from any one. To them these very insignificant causes turn so very painful that they immediately resolve to relieve themselves by committing suicide, and, as hanging is the mode of death generally preferred by suicides, they take recourse to this mode of death."

There can be no doubt, I think, that these observations indicate a very common predisposing cause and frequent exciting cause of self-destruction. But disease of a painful or fatal kind inclines to suicide in another way than by operating directly on the mind and feelings, namely, by diminishing the value of life and detracting from the sense of the permanence and stability of existence. It seems unnecessary to dwell on this consideration; for it is obvious that the more life is surrounded by risks, the less hesitation and scruple will there be among those so inclined voluntarily to put an end to it. Any measures tending to improve public health and increase the value of life must therefore possess a strong influence in preventing suicide.

4. *Leper burial*.—In this connection, I may briefly allude to a remarkable practice of self-destruction on account of physical suffering which at one time was very common in this country and still lingers in some parts of India. I allude to *sumajh* or the burying alive of lepers. This crime was rather an instance of murder than suicide; because the deprivation of life was caused by others; but the deed was always committed really or ostensibly at the earnest solicitation of the victim of the loathsome, painful and incurable malady of leprosy. The criminal history of India abounds in narratives of the commission of this singular crime. The practice was resorted to by both Mahomedans and Hindoos, and it was found necessary to enact special laws for its prevention. Macnaughten's *Reports*, Beaufort's *Digest* and Chevers' *Medical Jurisprudence* contain numerous instances of its commission under a variety of circumstances. As recently as April 1868 the Agent of the Governor-General for Rajpootana found it necessary to invite the special attention of the Government of India to the prevalence of the crime in Cashmere and some of the Rajpootana Native States. Here is the Agent's account of the manner of the crime: "A poor suffering wretch—influenced perhaps by priests, by relatives glad to get rid of him, and by consciousness of his own noxious condition—expresses a desire to bury himself alive. The relatives for two or three days remonstrate and endeavour to dissuade, but he is firm; some of the nearest relatives then get up a procession, dig a pit; the doomed man voluntarily enters it, his friends heap up and beat down the soil, and the whole of the villagers witness the sacrifice. A few days subsequently the mob visits the afflicted house, opium water is drunk and the taint is removed. The rite, inhuman as it is, seems to have been long practised; nothing is hidden or denied, those concerned saying that it is the established custom of the country." In the *Indian Medical Gazette* for October 1875 an instance of *sumajh* is related as having occurred in September 1874, and it is evident that, though the chiefs of the Rajpootana States have, under the influence of the Government of India, publicly discountenanced and prohibited the custom, it still lingers in these parts. Now the effect of a usage of this sort on the public feeling extends beyond the actual circumstances of the particular custom and perpetuates a belief that there are conditions of life in which the best course is to put an end to existence. This and other social usages to which I shall presently allude, now happily things of the past in India, engender and maintain a suicidal propensity, and it is not wonderful that that propensity operates with special power on

the weaker and more impressionable members of the community namely, the female portion of it.

5. *Insanity and disease of the brain* are a well-established cause of self-murder. Indeed, some go so far as to consider suicide of itself an insane act and an evidence of insanity. In the majority of cases of suicide in England, Coroners' juries bring in a verdict of "temporary insanity"; but this course is followed more with a view of removing religious and social scruples regarding the decent burial of an individual pronounced *felo-de-se*, than under the conviction that all persons committing suicide are insane. The relations of insanity to suicide are numerous and delicate, and the subject is one on which I might enlarge at great length, but I shall content myself with simply stating that, when the act is not palpably consequent upon an insane delusion, a general state of mental depression or melancholia or an uncontrollable impulse—when there exists a palpable cause or motive impelling the individual to make choice of the alternative of self-destruction as a means of escaping real suffering or annoyance, of avoiding positive distress or trouble—then self-murder is not an act of insanity, however foolish or unreasonable it may appear, or however apparently trivial the immediate stimulus to its perpetration.

Dr. Taylor in his *Principles and Practice of Medical Jurisprudence* (edition of 1865, p. 1038) states:—"The law of England very properly treats suicide as a felony; those who have attempted and failed in its perpetration, are held to be sane and responsible agents, unless there should be clear evidence of their (intellectual) insanity from other circumstances, and it is certain that the evidence required to establish this must be much stronger than that sometimes admitted in cases of homicide." Indian practice is to the same effect, and there is no evidence to show that insanity is a frequent cause of suicide in this country.

6. *Intoxicating drugs.*—In England the use of alcohol is responsible for a very large proportion of the cases of suicide which occur, both on account of its direct influence, and the poverty, misery, social ruin and domestic unhappiness which the vice of drunkenness entails. In this country the vice of drinking is fortunately less prevalent, and I trust it will always continue so; but other intoxicants, more particularly opium and Indian hemp, are largely in use. I have no facts to show whether either or both of these predispose to suicide. The intoxication produced is not of a suicidal kind; but in the case of opium it is very likely that its use as an article of habitual consumption may, and does often suggest its use as an agent of suicide, for the line of demarcation between the intoxicat-

ing dose and the poisonous dose is not a broad one. This supposition is rendered probable by the fact that in China, where suicide is very common and the habitual use of opium as an intoxicant is also very common, the drug is the principal means by which self-destruction is perpetrated; hanging and drowning coming next in frequency.* Behar and some part of the North Western Provinces, where opium is grown, and no doubt consumed largely, imitate China closely as regards suicides.

I now come to the second division of causes, namely, the moral, and I propose to make a few remarks on religious, political, social and domestic influences.

1. *Religion* is a delicate subject of discussion, but I cannot avoid making a few observations on its relation to the subject of self-murder. It possesses both a deterrent and an adjuvant influence; the former, I am bound to say, being the true and legitimate attitude of religion and the latter the consequence of its abuse and degradation. The influence of religion on the conduct and will of man depends upon the conviction that the acts of the present life are conditions of happiness or misery in the future. Religion further lends a sanction and support to morality by bringing our doings under the cognisance and judgment of a supernatural power. The more vivid and real the belief in, and subjection to these principles, the stronger the power of religion against evil and for good. The Christian religion holds suicide to be a damning sin, and persons putting an end to their lives, if they believe in the tenets of the Christian faith and reflect on the matter, voluntarily subject themselves to eternal misery. They deprive themselves of the offices and rites of religion, and put themselves beyond all the hopes for the future which belief in its dogmas and compliance with its precepts and ceremonials encourage. The influence of that phase of religion which owes its power to the presumed dependence of the future on our acts in the present life is very powerfully depicted by Shakespeare in that remarkable and well-known passage in the play of Hamlet in which the Prince of Denmark deliberately argues with himself the advantages and disadvantages of committing suicide.

“ To be, or not to be ; that is the question ;
Whether 'tis nobler in the mind to suffer
The slings and arrows of outrageous fortune,
Or to take arms against a sea of troubles,
And by opposing, end them ? To die ; to sleep ;
No more ; and by a sleep to say we end

* See *China ; A history of the laws, manners, and customs of the people.* By Henry Gray, M.A., LL. D, Archdeacon of Hongkong, Chapter XIII—Suicides.—Page 329.

The heart-ache and the thousand natural shocks
That flesh is heir to, 'tis a consummation
Devoutly to be wished. To die, to sleep;
To sleep; perchance to dream; ay, there's the rub;
For in that sleep of death what dreams may come
When we have shuffled off this mortal coil,
Must give us pause; there's the respect
That makes calamity of so long life;
For who would bear the whips and scorns of time,
The oppressor's wrong, the proud man's contumely,
The pangs of despised love, the law's delays,
The insolence of office and the spurns
That patient merit of the unworthy takes,
When he himself might his quietus make
With a bare bodkin? Who would fardels bear
To grunt and sweat under a weary life,
But that the dread of something after death,
The undiscovered country from whose bourne
No traveller returns, puzzles the will
And makes us rather bear those ills we have
Than fly to others that we know not of?
Thus conscience does make cowards of us all;
And thus the native hue of resolution
Is sicklied o'er with the pale cast of thought,
And enterprises of great pith and moment
With this regard their currents turn awry
And lose the name of action."

It has been alleged by statisticians that the practice of suicide is less common in Catholic countries, where the belief in the truth of religion and the efficacy of its offices is more rigid and vivid, than in Protestant countries where religious convictions are not so general and deep and religious influences not so binding.* As regards this country I am assured by two learned members of this Association that the religions of both Mahomedans and Hindoos affirm and support the maxim that self-murder in an offence against religion, law and nature.† I doubt, however,

* Casper.—*Denkwürdigkeiten zur Medicinischen Statistik.* Berlin, 1846, p. 139.

† Moulvi Abdool Luteef, Khan Bahadoor, writes as follows: "Suicide is considered as sinful; in Mahomedan Law as murder—the one being as much a deliberate act with the intention of depriving a human being of his life as the other. The Mahomedans look upon the crime of suicide with as much horror as murder." The Rev. K. M. Banerjee, LL. D. informs me that—"The Hindoo Shastras notice suicide as a sin for which the man that kills himself forfeits all funeral rites and offerings due from children to the souls of departed parents and ancestors. Wilful ignorance of the highest truths of religion is stigmatized as the murder of one's own soul, which shows that suicide was held a crime." On the other hand the following passage from the Shastras quoted by Chevers (*Op. cit.*, p. 666) shows that in certain circumstances the deprivation of life was esteemed a blessing.

"A mansion with bones for its rafters and beams, with nerves for its cords, with muscles and blood for mortar, with skin for its outward covering, filled with

whether the sanctity of the present life and of the human frame as its embodiment, and the certainty of its voluntary destruction entailing future punishment and misery are so emphatically laid down in either religion as by the precepts of the Christian Church. I shall not enlarge upon this point; but it is evident that the quality and strength of religious views with regard to this particular subject must materially govern and guide the general feeling and habit of a community. There is, however, another attitude of religion which is favourable to the suicidal idea. I allude to the elements of asceticism and sacrifice which have a place in all religions and which are apt in debased states of religion to assert too prominent a position. The body is, under this influence, apt to be looked upon as an enemy which must be subjected to discipline and correction, and no sacrifice is supposed to be so acceptable to a higher power as the sacrifice of any pleasures we may derive from life, and of the gratifications which we may obtain from the fulfilment of those instincts, emotions and impulses, social, domestic and personal, which constitute life. Life is divided according to this doctrine into the higher or spiritual and lower or sensual, and it is esteemed a virtue to despise, check, nay mortify and chastise the body for the sake of the soul. Fasting and torture have been practised under the dominance of this idea, which has culminated in the voluntary deprivation of life in the shape of martyrdom or sacrifice. In this country self-mutilation and murder have been committed under such influences. I need only allude to the self-imposed asperities of *fakcers* and *jogis*, the cruel rites of the *Churruck poojah*,* the voluntary sacrifice of life under the wheels of Juggernath's car and *sati* or widow-burning as illustrations. These practices are now happily a thing of the

no sweet perfumes; but loaded with faeces and urine, a mansion infested with sickness and sorrow, the seat of malady, haunted with the quality of darkness, incapable of standing long—such a mansion of the vital soul let the occupier always cheerfully quit."

* Compare Kinglake's account of the Easter celebrations in Jerusalem. "Although the pilgrims perform their devotions at the several shrines with so little apparent enthusiasm, they are driven to the rage of madness by the miracle displayed before them on Easter Saturday. Then it is that the Heaven-sent fire issues from the Holy Sepulchre. The pilgrims assemble in the great church, and already long before the wonder is worked, are wrought by anticipation of God's sign as well as by their struggles for room and breathing space to a most frightful state of excitement. At length the chief priest of the Greeks, accompanied (by all people in the world) by the Turkish Governor, enters the tomb. After this there is a long pause, but at last and suddenly, from out of the small aperture on either side of the Sepulchre, there issue long shining flames. The pilgrims now rush forward madly struggling to light their tapers at the holy fire. This is the dangerous moment and many lives are often lost."—*Rothen*, page 195.

past. They have their parallel in the tortures to which the monks and saints of the middle ages subjected themselves in Europe. Their influence in originating and perpetuating the suicidal idea cannot be denied, and the idea will naturally linger long after the practices themselves have disappeared. I have not referred to the rites supposed to be acceptable to sanguinary deities—to the divine embodiments of the ideas of destruction and death, but it is obvious that these have a direct effect in maintaining propensities towards self-murder. These things are not, as I have remarked, the legitimate result of religion, but of its debasement and degradation, and, with a return to purity of faith and propriety of religious practice, we have every reason to hope for the growth of healthy social feeling and the uprooting of unnatural social propensities.

2. *Political influences.*—It may be laid down as a general law that anything which tends to social prosperity, harmony and order will also tend to reduce the number of suicides, and that the opposite conditions will increase them. I need not illustrate these very obvious statements; but it is an interesting question how far positive legal enactment is capable of repressing the practice. In England self-murder is in the eye of the law a felony, and the voice of law is seconded and sustained by strong religious and social prejudices. Still, as we have seen, the number of suicides in England is large. I doubt whether the would-be suicide takes much account of law when he attempts his own life; he expects to place himself beyond the grasp of law and the reach of social detraction. The effect of law, if any, must be, by formulating and giving public expression and sanction to the common feeling on the subject, to encourage and strengthen if it does not create a sense of the cowardice, immorality and depravity of the act of self-destruction.


I gather from Beaufort's *Digest* that the attempt to commit suicide was punishable under Mahomedan Law, and the Penal Code prescribes severe punishments for attempts to commit suicide, and still severer penalties for aiding or abetting its commission. The effect of law in repressing special forms of suicide—*sati* and other descriptions of self-torture and immolation—has been conspicuous and certain. The sections of the Penal Code to which I have alluded (Sections 305, 306, 309) are being applied vigorously. I find that in the town of Calcutta during the five years 1871-75 an average of 26 cases were instituted for attempts at suicide or for aiding and abetting the crime, and that in 1876 there were 25 cases, in 9 of which a conviction was obtained. In the province of Bengal the same five years yielded an average of 391 5 cases,

and in 1876 there were 457 cases instituted with 248 convictions. These proceedings must to some extent educate and influence the people and tend to raise a sense of wrong-doing in connection with suicide. It is a question of importance whether placing legal restrictions upon the sale of poisons would reduce the number of suicides. Arsenic and opium are easily obtainable to any amount in this country, and these are almost the only poisons used by suicides. I am strongly of opinion that some restrictions should be placed on the sale of poisonous articles in every community; but looking to the fact that in the Bombay Presidency where a local law of this kind exists, the proportion of suicides by poison is higher than in the Madras Presidency where none exists, I doubt very much whether the law has much deterrent effect. I certainly think that something ought to be done in Calcutta where suicide by poisoning amounts to 1.1-2 per cent. of the whole.

3. *Social influences.*—I have already expanded this paper to such a length that I can only very briefly sketch a few social customs or feelings which are specially favourable to the propensity to self-murder.

The first feeling of this kind to which I shall allude is a very common one among all oriental nations—that, namely, which prompts individuals to injure or kill themselves for the purpose of revenge. This propensity is exceedingly common in China and Japan. The approved method of wreaking vengeance on an enemy, or avenging an insult or wrong, is not to do bodily harm to the enemy but to oneself, under the impression that your enemy becomes responsible for whatever injury you inflict upon yourself. In India this used to be a very common custom. The practice of *Dhurna* or self-starvation at an enemy's door was one phase of it.

Brahmans took advantage of the personal sanctity popularly attributed to themselves and their relatives, and frequently committed self-mutilation or murder, or killed their female relatives with a view to throw the responsibility of the act upon others. So common were these occurrences that a repressive enactment was passed by Government, and this undoubtedly had a material influence in abolishing such crimes. Still, as in the case of religious sacrifices, it is more difficult to extirpate the feelings which underlie acts of this kind than to repress the acts themselves.

In the second place, the practice of *sati*, which was rather a social rite or custom than a religious one, though it was permitted or sanctioned by the religion of the time, must have had a powerful influence in promoting suicide, more especially among women, in circumstances of irritation and unhappiness; and, though the burning and burial of widows is now happily a matter of history, still 

do believe that the excess of female suicides is greatly due to the survival of the *sati* feeling in the country.

But, fourthly, the social position which women hold in this country is one of depreciation and subjection, and this must powerfully encourage a feeling of self-depreciation, which is the initial stage of self-destruction. A man esteems it a misfortune when a female child is born to him. The education of females is neglected, and their social value is accounted very low. They remain ignorant and childish throughout life. They are deprived to a great extent of liberty and thus are rendered incapable of exercising intelligent self-control. They live an instinctive, emotional, impulsive life into which the intellectual element does not enter. They possess no rational power over their own social destinies—no choice in the selection of their partners in life. They are strangers to the feelings of refined love, respect, esteem which ought to precede marriage. They may be mated to men who fail to awaken any of these feelings. Nay, their young hearts may be broken by a forced alliance with an aged churl, and, as widows, their young lives may be permanently blighted and what they have been taught to count sweetest in life turned to sourness before they have tasted it. Such being the case, is it surprising that they often seek in suicide a release from a life which means to them contempt, annoyance, disappointed hopes, lacerated feelings and general despair? *

Fifthly, the severe rules of caste not unfrequently goad people in this country to suicide. Colonel Pugh in his report for 1872 accounts for the number of female suicides in Orissa partly by the "fact that there are many outcast women to be found in all parts

* Dr. John Muir of Madras, in commenting on the excess of female suicides in Madras, writes:—"The position of a wife in India is very different from what it is in England. Having no social status, or, if any, a very degraded one, regarded by their husbands more as a servant than as a companion, absolutely passive in everything, and subject to the will and caprice of the lords of their destiny, the Hindoo wife is commonly treated with contempt, severity and cruelty.

"A Hindoo marries not so much to gain the affection and sympathy of one who will share with him the trials, and assist him in his struggles with the world, as to have possession of one who will bear children, and be subservient to his rule and passions. Mutual confidence, kindness or concord are, therefore, rarely found to exist among them.

"The undivided family of a Hindoo (numbering among them many members of different degrees of relationship) may have many of the advantages ascribed to it, but it is unquestionably a fruitful source of the most serious family quarrels.

"The young wife, thrown into such a family invariably at a very tender age, is too frequently treated in such a harsh and domineering manner as to drive her to despair, when she resorts to self-destruction as the only effectual means of relieving her from a miserable existence.

"These family discords, as well as the loose immoral lives too often led by the husbands, are not only the most common cause of suicide of many women, but also account for the larger number of females than males putting an end to their lives."

of the country who saved their lives during the famine at the expense of their caste by taking food at the relief centres and who are now known as 'Chutter Khaies.' These unhappy creatures are kept now by one man and now by another, and when all else fails, they commit suicide." "Many young widows also," he adds, "who are not allowed to re-marry have recourse to the same means of putting an end to their cheerless life. The insufficiency of the motive in many cases shows how ready the natives of Orissa are to commit suicide." In Europe, it has been found that suicide is more common among the unmarried than the married. I have no data on this point for this country, but even if I had, the comparison would not be a fair one on account of the different marriage customs and the larger proportion of the married in this country.

4. On the subject of *domestic influences* I dare not enter, for I feel that I am incompetent to handle them. The immediate motive to suicide is no doubt in most cases of a domestic kind—a quarrel, slight, some petty annoyance, grief, shame, jealousy or the like, and it is remarkable how trivial the alleged immediate causes of suicide often are; but I think that the real causes of suicide are to be looked for in those more general social conditions and influences which I have enumerated rather than in the petty annoyances which constitute the last and most apparent stimulus to the deed.

I am afraid that you will consider the picture which I have drawn a dark one—too dark; but my subject is a dark one, and I have been compelled to seek out social shadows to account for a particular social blot. I am free to admit that the social weaknesses which I have enumerated are exceptional, and by no means constitute a social rule, but it is none the less the duty of an Association constituted as we are for purposes of social reform to dwell upon facts indicating social defects and to consider how they can best be remedied. I shall leave the question of remedy in your hands; but it appears to me that it must lie on the following lines, namely:

1. Efforts to improve the value of life.
2. To purify and refine the religious and moral sense.
3. To educate the intellect and enhance the usefulness of existence, so that it may become a settled conviction that the very worst solution of the problem of life, is its destruction; and
4. Specially and prominently, to raise the social value and status of woman, by education, by a judicious cultivation of the intellect, and by a gradual social emancipation as she becomes more and more fitted by these means to assume a more independent and substantial place in the social organization.

A.
Number of deaths by Suicide in ENGLAND AND WALES during the years 1871-75.

Year.	Population.			Suicides.			Per million of population.		
	M.	F.	T.	M.	F.	T.	M.	F.	T.
1871, 	11,093,123	11,689,689	22,782,812	1103	392	1495	99·4	33·5	65·6
1872, 	11,231,339	11,836,496	23,067,835	1095	419	1514	97·5	35·4	65·6
1873, 	11,371,273	11,985,141	23,356,414	1129	389	1518	99·3	32·4	65·
1874, 	11,512,956	12,135,653	23,648,609	1204	388	1592	104	32	67·4
1875, 	11,656,400	12,288,059	23,944,459	1184	417	1601	102	33·9	66·8
Total, ...	56,865,091	59,935,038	116,800,129	5715	2005	7720	100·5	33·4	66·2
Means, 	11,373,018	11,987,007	23,360,025	1143	401	1544			
Percentages, 	48·7	51·3	100	74	26	100	.....	.....	... ..
100 males to females, ..	100	105	.....	100	35·1	.....	100	33·2	.....

B.
Number of deaths by Suicide in the Town of London during the years 1871-75.

Year.	Population			Suicides.			Per million of population.		
	M.	F.	T.	M.	F.	T.	M.	F.	T.
1871,	1,529,183	1,734,307	3,263,390	207	86	293	135	49.5	89.8
1872,	1,551,140	1,760,158	3,311,298	196	74	270	126	42	81.5
1873,	1,572,035	1,784,038	3,356,073	211	66	277	134	36.9	82.5
1874,	1,591,692	1,809,009	3,400,701	189	68	257	119	37.6	75.5
1875,	1,612,501	1,832,659	3,445,160	199	98	297	123	53.4	86.1
Total,	7,856,551	8,920,071	16,776,622	1002	392	1394	127	43.9	82.8
Means,	1,571,310	1,784,014	3,355,324	200.4	78.4	278.8			
Percentages,	46.8	53.2	100	71.8	28.2	100	.....	.....	.....
100 males to females,	100	114	.....	100	39.3	.....	100	34.6	.....

No. I.
Number of deaths by Suicide in the TOWN OF CALCUTTA during the years 1872-76.

Year.	Population.			Suicides.			Per million of Population.		
	M.	F.	T.	M.	F.	T.	M.	F.	T.
1872,	299,857	147,744	447,601	17	15	32	56.7	101.5	71.5
1873,	299,857	147,744	447,601	18	8	26	60.0	54.2	58.1
1874,	299,857	147,744	447,601	22	13	35	73.4	88.0	78.2
1875,	299,857	147,744	447,601	21	22	43	70.0	149.0	96.1
1876,	282,506	147,029	429,535	17	19	36	60.1	129.2	83.9
Total,	1,481,934	738,005	2,219,939	95	77	172	64.2		
Means,	296,387	147,601	443,988	19	15.4	34.4	104.4		
Percentages,	66.7	33.3	100	55.2	44.8	100	.....	
100 males to females,	100	50	.....	100	81	.....	100	163	.....

Mean death rate, 2.8 per 1000.

No. 2.
Number of deaths by Suicide in the PROVINCE OF BENGAL during the years 1872-76.

Year.	Population.			Suicides.			Per million of population.		
	M.	F.	T.	M.	F.	T.	M.	F.	T.
1872,	29,870,216	30,080,300	59,950,516	532	883	1415	17.8	29.3	23.6
1873,	29,715,313	29,972,091	59,687,404	614	1028	1642	20.7	34.3	27.4
1874,	29,868,042	30,078,272	59,946,314	838	1311	2149	28.1	43.6	35.8
1875,	29,868,042	30,078,272	59,946,314	738	1249	1987	24.7	41.5	31.5
1876,	29,867,067	30,077,432	59,944,499	841	1342	2183	28.2	44.6	36.4
Total,	149,188,680	150,286,367	299,475,047	3563	5813	9376	23.9	38.7	31.3
Means,	29,837,736	30,057,273	59,895,009	712.6	1162.6	1875.2			
Percentages,	49.85	50.15	100	38	62	100	.....	.....	.....
Females to 100 males,	100	100.7	.....	100	163	.....	100	162	.....

Mean death-rate, 9.7 per 1000.

No. 3.

Number of deaths by Suicide in selected areas in the PROVINCE OF BENGAL during the years 1872-76.

Year.	Areas.	Population.			Suicides.			Per million of population.		
		M.	F.	T.	M.	F.	T.	M.	F.	T.
1872	Urban,	477,686	318,505	796,191			45	53.6	65.9	66.5
	Rural,	3,813,580	3,843,668	7,657,248	24	21	259	25.4	42.2	33.8
	Total,	4,291,266	4,162,173	8,453,439	121	183	304	28.2	44.0	36.0
1873	Urban,	621,906	548,367	1,170,273	41	31	72	65.9	63.5	61.5
	Rural,	750,175	742,135	1,492,310	22	37	59	29.3	49.8	39.5
	Total,	1,372,081	1,290,502	2,662,583	63	68	131	45.9	52.4	49.3
1874	Urban,	672,270	607,222	1,279,492	34	42	76	50.6	69.2	59.5
	Rural,	703,342	703,594	1,406,936	23	49	72	32.7	69.7	51.4
	Total, ..	1,375,612	1,310,816	2,686,428	57	91	148	41.4	69.5	55.2
1875	Urban,	675,976	609,987	1,285,963	44	51	95	65.3	83.6	74.1
	Rural,	704,189	699,924	1,404,113	30	47	77	42.6	67.1	54.7
	Total,	1,378,165	1,309,911	2,688,076	74	98	172	53.7	74.8	64.0
1876	Urban,	1,028,558	973,675	2,002,233	60	60	120	58.4	61.6	59.9
	Rural,	2,435,146	2,442,850	4,877,996	74	161	235	30.4	65.9	48.2
	Total,	3,464,004	3,416,525	6,880,529	134	221	355	38.7	64.6	51.6
Total,	Urban,	3,474,696	3,057,756	6,532,452	203	205	408	58.5	67.0	62.4
	Rural,	8,406,432	8,432,171	16,838,603	246	456	702	29.3	54.1	41.7
	Grand Total, ..	11,881,128	11,489,927	23,371,055	449	661	1110	37.8	57.5	47.5
Percentages,		50.8	49.2	.....	40.4	59.6	.....	.....	.....	.....
100 males to females,		100	97	.....	100	147	.....	100	152	.....

No. 4.

Number of deaths by Suicide in some selected districts of the PROVINCE OF BENGAL during the years 1872-76.

District.	Population (selected areas) average of 5 years.			Suicides (average of 5 years).			Per million of population.		
	M.	F.	T.	M.	F.	T.	M.	F.	T.
Pooree,	120,964	117,397	238,361	8.8	15.2	24	72.8	128.1	100.7
Cuttack,	179,802	188,871	368,673	9.8	21.6	31.4	54.6	114.4	85.2
Nuddea,	201,830	216,178	417,008	11	18.6	29.6	54.5	86.5	71
Patna,	248,399	259,688	508,087	7.6	21.2	28.8	30.6	81.7	56.7
Gya,	347,483	357,777	705,260	8	26.8	34.8	28	77.5	49.5
Total,	1,098,478	1,138,911	2,237,389	45.2	103.4	148.6	} 41.2		66.4
Means,	219,695	227,782	447,477	9	20.7	29.7			90.7
Percentages,	49.1	50.9	100	30.4	69.6	100	} 100		.....
100 males to females,	100	104	.....	100	230	.....			226

No. 5.
Number of deaths by Suicide in the NORTH WESTERN PROVINCES during the years 1872-76.

Year.	Population.			Suicides.			Per million of population.		
	M.	F.	T.	M.	F.	T.	M.	F.	T.
1872,	16,406,833	14,362,223	30,769,056	480	856	1336	29.2	59.6	43.4
1873,				491	1044	1535	29.9	72.7	49.8
1874,				425	1086	1511	25.9	75.6	49.2
1875,				456	1109	1565	27.8	77.2	50.9
1876,				429	1039	1468	26.1	72.3	47.7
Total, .....	.....	.....	.....	2281	5134	7415	27.8	71.6	48.2
Means,	16,406,833	14,362,223	30,769,056	456.2	1026.8	1483			
Percentages,	53.3	46.7	100	30.8	69.2	100	.....	.....	.....
100 males to females,	100	87.5	.....	100	225	.....	100	258	.....

Mean death-rate, 23.5 per 1000.

No. 6.
Number of deaths by Suicide in some selected districts of the NORTH WESTERN PROVINCES, during the years 1872-76.

District.	Population (annual average).			Suicides—(average of 5 years).			Per million of population.		
	M.	F.	T.	M.	F.	T.	M.	F.	T.
Shahjehanpur,	511,136	438,335	949,471	37.4	104.4	141.8	73.2	238	149
Farruckabad,	499,722	419,026	918,748	24.6	63.8	88.4	49.3	152	96.2
Azamgarh,	826,445	705,265	1,531,410	14	62.2	76.2	16.9	88.2	49.8
Budaon,	503,619	430,729	934,348	17.6	42.4	60	34.9	98.4	64.2
Jhansi,	167,519	150,216	317,735	16.8	51.8	68.6	100	345	21.6
Total,	2,508,141	2,143,571	4,651,712	110.4	324.6	435	44.1		
Means,	501,628	428,714	930,342	22.1	64.9	87	151		
Percentages,	53.9	46.1	100	25.4	74.6	100	.....	
100 males to females,	100	85	.....	100	294	.....	100		
							343*		

No. 7.
Number of deaths by Suicide in the PROVINCE OF PUNJAB during the years 1872-76. •

Year.	Population.			Suicides.			Per million of population.		
	M.	F.	T.	M.	F.	T.	M.	F.	T.
1872,	9,509,902	7,977,223	17,487,125	103	124	227	10.8	15.5	12.9
1873,				115	143	258	12.1	17.9	14.7
1874,				116	134	250	12.2	16.8	14.3
1875,				90	102	192	9.5	12.8	11
1876,				87	102	189	9.1	12.8	10.8
Total, .....	.....	.....	.. .....	511	605	1116	10.7		
Means,	9,509,902.	7,977,223	17,487,125	102.2	121	223.2			
Percentages, ..	54.3	45.7	100	45.8	54.2	100	.....	.....	.....
100 males to females,	100	84	.....	100	118	.....	100	142	...

Mean death rate, 23 per 1000.

No. 8.

Number of deaths by Suicide in some selected districts of the PROVINCE OF PUNJAB during the years 1872-76.

District.	Population (annual average).			Suicides (average of 5 years).			Per million of population.		
	M.	F.	T.	M.	F.	T.	M.	F.	T.
Goorgaon, ...	370,251	326,395	696,646	5.6	15.8	21.4	15.1	48.6	30.7
Jullundur,...	429,187	353,833	783,020	7.4	12	19.4	17.2	33.9	24.8
Hushiarpur, ...	504,393	434,497	938,890	7.8	13	20.8	15.5	29.9	22.2
Kangra, ...	393,460	350,298	743,758	11.6	16.4	28	29.5	46.9	37.7
Delhi, ...	326,306	282,544	608,850	7.6	5.6	13.2	23.3	19.8	21.7
Total, ...	2,023,597	1,747,567	3,771,164	40	62.8	102.8	} 19.8		
Means, ...	404,719	349,513	754,232	8	12.6	21.6			
Percentages, ...	53.7	46.3	100	38.9	61.1	100	.....	.....	.....
100 males to females, ...	100	86.1	.....	100	157	.....	100	182	.....

No. 9.
Number of deaths by Suicide in the PROVINCE OF OUDH during the years 1872-76.

Years.	Population.			Suicides.			Per million of population.		
	M.	F.	T.	M.	F.	T.	M.	F.	T.
1872,	5,789,878	5,395,479	11,185,357	188	280	468	32.5	51.9	41.8
1873,	5,789,878	5,395,479	11,185,357	196	313	509	33.9	58.1	45.5
1874,	5,784,495	5,390,290	11,174,785	238	398	636	41.1	73.9	56.9
1875,	5,796,697	5,376,841	11,173,538	229	442	671	39.5	82.2	60.1
1876,	6,202,466	5,753,219	11,955,685	259	373	632	41.7	64.9	52.8
Total,	29,363,414	27,311,308	56,674,722	1110	1806	2916	} 37.8		
Means,	5,872,683	5,462,261	11,334,944	222	361	583			
Percentages,	51.8	48.2	100	38	62	100	.....	.....	.....
100 males to females,	100	98	.....	100	163	...	100	175	.....

Mean death rate 15.2 per 1000.

No. 10.

Number of deaths by Suicide in some selected districts of the PROVINCE OF OUDH during the years 1872-76.

Districts.	Population (annual average).			Suicides (average of 5 years).			Per million of population.		
	M.	F.	T.	M.	F.	T.	M.	F.	T.
Lucknow, ...	416,960	372,505	789,465	15.2	26.2	11.4	36.5	70.3	52.4
Unao, ...	483,686	462,269	945,955	28	40.8	68.8	57.9	88.2	72.7
Barabanki, ...	566,190	535,975	1,102,165	25.2	36.8	62	44.5	68.7	50.2
Hurdai, ...	500,994	340,523	941,517	33.6	54.4	88	67.1	159.8	93.5
Sultanpur, ...	505,591	490,865	996,456	16	38.6	51.6	31.6	78.7	54.8
Total, ...	2,473,421	2,202,187	4,675,558	118.0	196.8	314.8	47.8	89	67.2
Means, ...	494,684	440,427	935,111	23.6	39.3	62.9			
Percentages, ...	52.9	47.1	100	37.5	62.5	100	.....	.....	.....
100 males to females, ...	100	89	.....	100	167	.....	100	186	.....

No. 11.

Number of deaths by Suicide in the CENTRAL PROVINCES during the years 1872-76.

Years.	Population.			Suicides.			Per million of population.		
	M.	F.	T.	M.	F.	T.	M.	F.	T.
1872,	3,736,605	3,529,708	7,266,373	202	211	413	54.1	68.5	61
1873,	3,777,027	3,619,577	7,396,604	231	236	470	62	64.7	63.3
1874,	3,779,512	3,618,096	7,397,608	259	265	524	68.5	72.7	70.6
1875,	3,769,821	3,638,253	7,408,074	259	314	573	68.7	86.3	77.4
1876,	3,769,821	3,638,253	7,408,074	258	340	598	68.4	93.5	80.7
Total,	18,832,786	18,103,917	36,936,733	1,212	1,396	2,608	61.2		
Means,	3,769,557	3,620,789	7,387,346	242	279	521	61.2		
Percentages,	51	49	100	46.5	53.5	100	.....	
100 males to females,	100	96	.....	100	115	.....	100	120	.....

No. 12.

Number of acans by suicide in some selected districts of the CENTRAL PROVINCES for the 5 years 1872-76.

Districts.	Population (annual average).			Suicides (average of 5 years).			Per million of population.		
	M.	F.	T.	M.	F.	T.	M.	F.	T.
Damoh, ...	141,566	131,272	272,838	14.2	20.4	34.6	99.2	155.5	126.8
Nagpur, ...	324,241	310,514	634,755	29.4	48.2	77.6	90.7	155.2	122.2
Sagar, ...	276,874	244,985	521,859	20.8	27	47.8	75.2	110.1	91.7
Bhandara, ...	284,571	288,821	573,392	19.6	26	45.6	68.9	90	79.5
Nursingpur, ...	175,517	163,358	338,875	12.8	11.8	24.6	72.9	72.2	72.5
Total, ...	1,202,769	1,138,950	2,341,719	96.8	133.4	230.2	80.4		
Means, ...	240,554	227,790	468,344	19.3	26.7	46			
Percentages, ...	51.4	48.6	100	42.1	57.9	100	.....	.....	.....
100 males to females, ...	100	94.5	.....	100	137	.....	100	146	.....

No. 13.
Number of deaths by Suicide in the TOWN OF MADRAS during the 5 years 1872-76.

Years.	Population.			Suicides.			Per million of population.		
	M.	F.	T.	M.	F.	T.	M.	F.	T.
1872,	194,676	202,876	397,552	16	14	30	82.1	69.1	75.4
1873,				9	17	26	46.2	83.9	65.4
1874,				23	16	39	118.1	79	98.1
1875,				20	23	43	116.6	113.5	108.1
1876,				25	24	49	128.4	118.4	123.1
Total,	973,380	1,014,380	1,987,760	93	94	187	95.5		
Means,	194,676	202,876	397,552	18.6	18.8	37.4	94		
Percentages,	48.9	51.1	100	49.8	50.2	100	.....	
100 males to females, ..	100	104	.....	100	101	.....	100	97	.....

No. 14.
Number of deaths by Suicide in the PRESIDENCY OF MADRAS during the 5 years 1872-76.

Years.	Population.			Suicides.			Per million of population.		
	M.	F.	T.	M.	F.	T.	M.	F.	T.
1872,	15,138,044	15,009,735	30,147,779	1,182	1,184	2,366	78.3	78.8	78.5
1873,	15,221,079	15,066,763	30,287,842	988	1,089	2,077	64.9	72.3	68.6
1874,	15,265,461	15,053,781	30,319,242	870	1,010	1,880	56.9	67.1	62.1
1875,	15,198,449	15,100,454	30,298,903	846	970	1,816	55.7	64.2	60
1876,	14,634,701	14,322,352	28,957,053	843	872	1,715	57.6	60	58.8
Total,	75,457,737	74,753,085	150,210,822	4,729	5,125	9,854		68.5	65.6
Means,	15,091,547	14,950,617	30,042,164	945.8	1,025	1,970.8			
Percentages,	50.1	49.9	100	48	52	100	.....	.....	.....
100 males to females,	100	99.6	.....	100	108	.....	100	109	.....

Mean death rate 19.1 per 1000.

No. 15.

Number of deaths by Suicide in some selected districts of the PRESIDENCY OF MADRAS during 1872-73.

Districts.	Population (annual average).			Suicides (average of 5 years).			Per million of population.		
	M.	F.	T.	M.	F.	T.	M.	F.	T.
Vizagapatam, ...	777,223	742,200	1,519,423	83	76	159	106.7	102.4	104.5
Kistna, ...	737,319	711,717	1,452,036	70.8	87.8	158.6	96	122.8	109.8
Godavery, ...	803,326	789,127	1,592,453	68.2	81	149.2	83.1	102.6	93.6
Nellore, ...	707,222	669,261	1,376,483	49	69.6	115.6	69.3	99	83.5
Tinivelly, ...	836,332	857,297	1,693,629	59	78.1	137.4	70.6	90.6	81.1
Total, ...	3,861,422	3,772,632	7,634,054	330.0	389.8	719.8	85.5	103.2	93.7
Means, ...	772,284	754,526	1,526,810	66	77.9	143.9			
Percentages, ...	50.5	49.5	100	45.9	51.1	100
100 males to females, ...	100	97.8	100	118	101	100

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No. 16.
Number of deaths by Suicide in the TOWN OF BOMBAY during the years 1872-76.

Years.	Population.			Suicides.			Per million of population.		
	M.	F.	T.	M.	F.	T.	M.	F.	T.
1872,	399,716	244,689	644,405	37	20	57	92.6	81.7	88.5
1873,				21	26	47	52.5	106.2	73
1874,				44	19	63	110.1	77.7	97.9
1875,				42	22	64	105.1	89.9	99.3
1876,				37	22	59	92.6	89.9	91.6
Total,	1,998,580	1,223,445	3,222,025	181	109	290	90.1	89.9	90.1
Means,	399,716	244,689	644,405	36	22	58			
Percentages,	62.1	37.9	100	32.4	37.6	100	... ..	.....	.....
100 males to females.	100	61	.....	100	60	... ..	100	99.7	.....

Mean death rate 27.2 per 1000.

No 17.
Number of deaths by Suicide in the PRESIDENCY OF BOMBAY during the years 1872-76.

Years.	Population.			Suicides.			Per million of population.		
	M.	F.	T	M.	F	T.	M.	F.	T.
1872,	8,457,972	7,723,769	16,181,741	337	129	766	39.9	55.6	47.3
1873,				340	166	806	40.2	60.4	49.8
1874,				369	105	768	42.6	52.8	47.4
1875,				389	432	821	46	55.9	50.7
1876,				320	453	773	37.8	58.7	47.8
Total,	42,289,860	38,613,815	80,903,705	1409	1759	3168	41.7		
Means,	8,457,972	7,723,769	16,181,741	352.2	439.8	792		56.9	49
Percentages,	52.3	47.7	100	44.4	55.6	100	.....	.....	.....
100 males to females, ..	100	91	.....	100	125	.....	100	136	.....

Mean death-rate 20.8 per 1000.

No. 18.

Number of deaths by Suicide in some selected districts of the PRESIDENCY OF BOMBAY for the years 1872-76.

Districts.	Population (annual average).			Suicides, (average of 5 years)			Per million of population.		
	M.	F.	T.	M.	F.	T.	M.	F.	T.
Dharwar, ...	506,023	482,014	988,037	42.2	56.2	98.4	83.4	116.6	99.6
Kaladgi, ...	417,398	398,399	815,797	31.4	38.4	69.8	75.2	96.2	76.3
Belgaum, ...	478,903	459,847	938,750	32	45.2	77.2	66.9	98.3	82.2
Sanara, ...	206,417	191,989	398,406	13.8	21	31.8	66.8	109.4	87.4
Satara, ...	539,356	521,646	1,061,002	21.2	36	57.2	39.3	69	53.9
Total, ...	2,148,097	2,053,895	4,201,992	110.6	196.8	337.4	{ 65.1		
Means, ...	429,619	410,779	810,398	28	39.4	67.4	{ 96		
Percentages, ...	51.2	48.8	100	41.7	59.3	100	{ }		
100 males to females, ...	100	95	.....	100	110	.....	100	147	.....

No. 20.

Summary of Tables A. B. and Tables 1 to 19.

Locality.	Ratio per million of Population.			Males.	Females.
	M.	F.	T.		
England and Wales,	100·5	33·4	66·2	100	33·2
London,	127·0	43·9	82·8	100	31·6
Calcutta,	64·2	104·4	77·6	100	163
Province of Bengal,	23·9	38·7	31·3	100	162
Do. Selected areas,	37·8	57·5	47·5	100	152
Do. Selected districts,	41·2	90·7	66·4	100	220
N. W. Provinces,	27·8	71·6	48·2	100	258
Do. Selected districts,	43·8	151·0	93·5	100	345
Punjab,	10·7	15·2	12·7	100	142
Do. Selected districts,	19·8	36·0	27·3	100	182
Oudh,	37·8	66·1	51·4	100	175
Do. Selected districts,	47·8	89·0	67·2	100	186
Central Provinces,	64·2	77·1	70·5	100	120
Do. Selected districts,	80·4	117·2	98·4	100	146
Town of Madras,	95·5	92·8	94·0	100	97
Madras Presidency,	62·6	68·5	65·6	100	109
Do. Selected districts,	85·5	103·2	93·7	100	121
Town of Bombay,	90·1	89·9	90·1	100	99·7
Bombay Presidency,	41·7	56·9	49·0	100	136
Do. Selected districts,	65·1	96	80·2	100	147

No. 21.
Modes of Committing Suicide.

LOCALITY.	LONDON.						ENGLAND AND WALES.						BRITISH ARMY.	
	2 years, 1874-1875.						2 years, 1874-1875.						5 years, 1869-73.	
	Annual number.			Percentages.			Annual number.			Percentages.			Annual number.	Percentages.
	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.		
1. Gunshot,	17	0	17	8.0	0	6.2	81	1	82	8.2	2	5.9	33.4	53.2
2. Wound,	49	19	68	25.6	23.5	25	277	73	350	28	18.2	25.1	126	20.1
3. Poison,	21	14	35	11.1	17.3	12.9	89	62	151	9	15.5	10.8	4	6.4
4. Drowning,	32	22	54	16.7	27.2	19.9	182	124	306	18.4	30.9	22	6.6	10.5
5. Hanging,	54	19	73	28.3	23.5	26.8	272	114	386	27.4	28.4	27.8	3.6	5.7
6. Otherwise,	18	17	35	9.4	8.5	9.2	89	27	116	9	6.8	8.4	2.6	4.1
Total, ...	191	81	272	100	100	100	990	401	1391	100	100	100	62.8	100

No. 21—(continued).
Modes of Committing Suicide.

LOCALITY.	CALCUTTA.						MADRAS.						BOMBAY.					
	5 years (1872-76).						5 years (1872-76).						5 years (1872-76).					
	Annual Number.			Percentages.			Annual Number.			Percentages.			Annual Number.			Percentages.		
Mode of committing Suicide.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.
	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.
1. Gunshot,	1.2	...	1.2	6.3	...	3.5	0.6	...	0.6	...	3.2	...	1.6	...	1.6	...	...	1.6
2. Wounding,	1.6	0.4	2.0	8.4	2.6	5.8	1.8	...	1.8	...	9.7	...	4.8	...	7.1	...	...	7.1
3. Poison, ...	8.6	6.6	15.2	45.3	42.9	44.2	1.6	0.4	2.0	8.6	2.1	5.3	19.4	...	31.5	...	...	31.5
4. Drowning,	1.4	0.4	1.8	7.4	2.6	5.2	11.6	17.6	29.2	62.4	93.7	78.1	29.8	...	48.5	...	...	48.5
5. Hanging,	6.2	8.0	14.2	32.6	51.9	11.3	3.0	...	3.8	16.4	4.2	10.1	4.4	...	7.1	...	...	7.1
6. Otherwise,	...	...	...	...	...	...	...	...	...	...	...	...	...	...	4.2	...	...	4.2
Total,	19.0	15.4	34.4	100	100	100	18.6	18.8	37.4	100	100	100	61.6	...	100	...	...	100

No. 21—(continued).
Modes of Committing Suicide.

LOCALITY.	PROVINCE OF PUNJAB.						MADRAS PRESIDENCY.						BOMBAY PRESIDENCY.					
	2 years (1872 & 1876).						5 years (1872-76).						4 years (1873-76.)					
	Annual number.			Percentages.			Annual number.			Percentages.			Annual number.			Percentages.		
	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.
1. Gunshot,	30	0'0	3'0	3'2	0'0	1'4	} 31'2	2'0	33'2	4'9	0'2	2'1	} 23'0	5'0	30'0	7'1	1'1	3'8
2. Wounding,	25	2	4'5	2'6	1'8	2'2												
3. Poison, ...	17'5	9'5	27'0	18'4	8'4	13'0	16'8	24'6	41'4	2'6	2'6	2'6	32'0	16'0	48'0	9'1	3'7	6'2
4. Drowning,	165	40'0	56'5	17'4	35'4	27'1	282'0	756'6	1038'6	44'3	79'1	65'2	160'0	328'0	488'0	45'6	76'7	62'7
5. Hanging,	47'5	52'5	100'0	50'0	46'4	48'1	299'6	171'0	470'6	47'1	17'9	29'3	134'0	79'0	213'0	38'2	18'5	27'3
6. Otherwise,	8'0	9'0	17'0	8'4	8'0	8'2	7'4	2'4	9'8	1'1	0'3	0'6	....	...	...	...	...	...
Total,	95'0	113'0	208'0	100	100	100	637'0	956'6	1593'6	100	100	100	351'0	428'0	779'0	100	100	100

No. 22.

Suicides according to Season.

Place.	PROVINCE OF BENGAL.						N. W. PROVINCES.					
No. of Years.	Year 1877.						5 years (1872-76).					
Months.	Number.			Percentages.			Number.			Percentages.		
	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.
January,	Information. Not available.		107	Information. Not available.		4.7	123	205	328	5.1	4.0	4.5
February,			133			5.8	96	207	303	4.2	4.1	4.1
March,			210			9.2	173	396	569	7.6	7.8	7.7
April,			233			10.2	246	560	806	10.9	11.0	11.0
May,			258			11.2	197	507	704	8.7	10.0	9.6
June,			272			10.9	226	581	807	10.0	11.4	11.0
July,			253			11.0	205	531	736	9.1	10.4	10.0
August,			171			7.5	197	524	721	8.7	10.3	9.8
September,			208			9.0	269	535	804	11.9	10.5	10.9
October,			172			7.5	224	450	671	9.9	8.8	9.2
November,			160			7.0	182	320	502	8.1	6.3	6.8
December,			114			5.0	125	276	401	5.5	5.4	5.4
Total,	2291	...	...	100	2263	5092	7355	100	100	100
Monthly means,	191	..	...	8.3	189	424	613	8.3	8.3	8.3
Jan. Feb. Mar. Oct. Novr. Decr.	876	...	...	38.3	923	1854	2777	40.3	36.4	37.8
April, May, June, July, Augst. September.	1415	...	...	61.7	1340	3238	4578	59.7	63.6	62.2

No. 22—(continued).

Suicide according to Season.

* LOCALITY.	PROVINCE OF PUNJAB.						BOMBAY PRESIDENCY.					
No. of years.	5 years (1872-76).						3 years (1873-4-5).					
Months.	Number.			Percentages.			Number.			Percentages.		
	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.
January, ...	23	32	59	5.4	5.5	5.5	83	88	171	7.7	6.7	7.2
February, ...	23	21	47	4.6	4.1	4.4	83	110	193	7.7	8.5	8.1
March, ...	48	59	107	9.7	10.1	9.9	82	109	191	7.6	8.4	8.0
April, ...	55	52	107	11.1	8.9	9.9	115	105	220	10.6	8.1	9.2
May, ...	62	68	130	12.5	11.6	12.0	105	128	233	9.7	9.8	9.8
June, ...	47	75	122	9.5	12.9	11.3	91	109	200	8.4	8.4	8.4
July, ...	51	55	106	10.3	9.4	9.8	92	113	205	8.5	8.7	8.6
August, ...	50	48	98	10.1	8.2	9.1	75	106	181	6.9	8.2	7.6
September, ...	49	52	101	9.9	8.9	9.3	102	111	213	9.4	8.5	8.9
October, ...	42	51	96	8.5	9.3	8.9	80	128	208	7.4	9.8	8.7
November, ...	23	37	60	4.6	6.3	5.6	87	112	199	8.0	8.6	8.4
December, ...	19	28	47	3.8	4.8	4.3	87	82	169	8.1	6.3	7.1
Total, ...	496	581	1080	100	100	100	1082	1301	2383	100	100	100
Monthly means, ...	41	49	90	8.3	8.3	8.3	90	108	198	8.3	8.3	8.3
Jan. Feb. Mar. Oct. Nov. Dec., ...	182	231	416	36.7	40.1	38.5	502	629	1131	46.4	48.9	47.5
Apr. May, June, July, Aug. Sept., ...	314	350	664	63.3	59.9	61.5	582	671	1252	53.6	51.6	52.5

The Rev. Dr. K. M. BANERJEE said :—I think every one will confess that we are under deep obligations to Dr. McLeod for the very learned and comprehensive discourse on the subject of human suicide with which he has favoured us. Few of his conclusions will be disputed by any one present. For myself I had no idea of the statistics of suicide of which he has informed us, nor did I know that they had been classified in the way we find they have been. Suicide, I should think, has very little attraction in general society. Shakespeare makes a noble Roman, Brutus, condemn the act. When he was asked by one of his fellow conspirators against Cæsar on the eve of the eventful battle which brought on their ruin, what he should do in case of a defeat, whether he would outlive his captivity, Brutus said that he had always condemned Cato's act and thought it rather cowardly for fear of what might happen hereafter to put an end to the present existence. But on being taunted by his querist that he would then love a life of bondage more than death, and rejoice in gracing his conqueror's triumph by being led in chains through the streets of Rome, he declared that under no circumstances would he submit to be led in triumph by the victor through the streets of Rome. That was the Roman feeling. Then those who under the influence of Philosophy considered it a crime still felt that they must have recourse to it when disgrace or dishonour was at hand ; and we all know how a lady in a state of dishonour owing to an outrage on the part of an ungrateful and cowardly guest, publicly put an end to her life, by which a revolution was brought about in the government of Rome. In this country, of course, it is very true that females very often under unfortunate circumstances are led to self-murder, putting an end to their own existence, and that (as the learned lecturer has pointed out) is brought about from a sort of despair which excludes all hope. They find themselves not only in a grossly miserable state, but a state of irreparable misery which nothing but death can relieve. That is their idea, and such an idea of course makes them sufficiently melancholy to covet death. I think every one will agree that a great duty devolves on society under such circumstances. It is incumbent upon all men, specially those who call themselves members of a Social Science Association, to consider to what extent they can remedy this saddest of evils. What those remedies may be, the learned lecturer himself has proposed, and I am unwilling to dilute the force of his observations by repeating them in my feebler language and weaker voice. But I hope that the lecture will draw public attention to the subject generally, and especially the attention of those whose self-vocation calls upon them to promote efforts for social improvement with a view to the remedying of evils which the lecturer has so correctly pointed out. I hope that the attention of the Association will be drawn to it, and that we shall all have afterwards reason to confess that we have not heard this lecture in vain.

Babu ISSER CHUNDER MITTER said :—I have much pleasure in seconding the proposition of my friend opposite. At this late hour I am not going to detain you with any comments on the lecture which has been just read. Of course the subject is a very wide one, the statistics collected are very interesting, and the suggestions made well worthy the consideration of this Association. I can only hope that the subject will attract attention, that opportunity will be taken at a future meeting to discuss this subject so ably handled by the able lecturer, and that something will be done, as suggested, to prevent the increase of this crime and, if possible, effect a reduction in the number of these offences.

Babu ASHUTOSH BISWAS, in supporting the vote of thanks, said :—With great pleasure I rise to support the vote of thanks which has been proposed to Dr. McLeod for the very able, interesting and excellent paper which he has

just read to us. You have seen that the learned Doctor has reviewed the question of suicide from almost every possible standpoint. There is, therefore, nothing new to add, and at this late hour I should be the last person to detain you except that I feel it my duty to say something on some of the opinions expressed by the learned lecturer on which I most respectfully differ from him. I start with a novel proposition which may seem to you somewhat paradoxical, but which to my mind seems very true. If you have taken the pains to study the history of ancient times and peoples, and contrast it with that of modern times and living nations, it must have struck you as a very remarkable feature in that comparison that suicides were very rare occurrences in the earlier stages of the history of mankind, when the world was almost enveloped in Cimmerian darkness. Should you put me to proof, I should refer you to some remarkable facts of history. Go back to the early history of the Jews, and there you will come across two solitary instances of suicide—I mean the suicides of Saul and Ahithophel. Go back to the early history of Rome, and there you will find another equally solitary instance in the reign of Tarquinius Priscus. I need not multiply instances from the histories of other nations, and trust that those I have quoted will go to show that before the progress of civilization, before it had widened the sphere of human ambition and taught men to pitch their aims high, the inclination to commit suicide was at a considerable discount. And then when you reflect upon the statistics of modern times, you have this painful fact before you, that with the progress of civilization and the consequent increase of ambition and growth of new wants, that inclination has been rising steadily to a premium. But although civilization has been instrumental to the increase of the crime of suicide, it still must never be desired that we should seek to arrest its progress and throw ourselves back to those dark and gloomy days when we were hardly worthy of a place in the hierarchy of living beings. The question naturally suggests itself, Is there or is there not any means of repressing the crime of suicide without at the same time checking the growth of civilization? It was for some time an open question whether or not one should seek to prevent suicide by legislation. I believe that you all know that that great, that immortal philosopher and historian, Mr. Buckle attempted to show the folly of legislation in seeking to diminish suicide by enacting penal laws against it. The learned lecturer, it seems, also shares such views. He too, it seems, entertains doubts about the efficacy of law in repressing suicide. But, gentlemen, Plutarch's celebrated instance of the Milesian virgins, that instance which is often quoted by modern jurists with approbation, has long prepared the minds of the people to receive with no good grace the arguments of that famous historian. You may therefore take it as an established fact that at present no two opinions exist about this efficacy of law, of a penal code, as a measure of prevention with regard to the crime of suicide. Here I shall not forget to call your attention to a most glaring defect in the Penal Code, that masterpiece of codification the like of which the world has scarcely ever seen. The learned Doctor has correctly observed that the code contains provisions for the punishment of abetment of suicide as well as of attempts at suicide. But the provisions against the latter are so lenient, so merciful, so generous, that they can hardly be expected to have any deterrent effect upon the minds of the people. Again, the code is silent as regards the suicides themselves. I should therefore like to see not only those merciful provisions recast and remodelled and made more strict and more stringent, but also new sections engrafted upon the existing ones in order to show up a suicide in the most odious and ignominious colours. I am not certain as to what is the present state of the English

law regarding suicide, but I do most fully remember that there was once a time when your English legislators walked in the grooves of their friends of Miletus. Not content with holding up a suicide to public shame and ignominy, the English law went further and confiscated his property, thus visiting his sin upon his unfortunate family. I should never recommend to our legislators such a system of vicarious punishment, but still I should fervently hope that they would reconsider the question of suicide in the light of the English law and add provisions to the existing code for showing up the corpse of a suicide in ignominy and shame. Such exhibitions I should think would be a very powerful deterrent. There may be some who would not like to see such ignominious sights, whose sense of modesty and decency might revolt at them, but such refined notions, such sentimentalism, should evaporate into the air in the presence of this stern, this heart-rending fact that suicides are largely increasing in this country. I might tell you here that the father of modern jurisprudence has not, as it appears to me, seen reason to find fault with such ignominious exhibitions. Hence I may say that if our legislature were to make provisions for them in the Penal Code, such provisions would be in consonance or at least would not conflict with the spirit of modern jurisprudence. But some may be apt to break in here and appeal to the religious prejudices and traditions of the people as an argument against such exhibitions. I need not discuss this point at length here, but will simply remind you of what the learned Doctor has said that our religion has no sympathy for a suicide. But if we have nothing to fear on the score of religion, there is another objection, more weighty, more substantial, more sensible. A certain class of thinkers have sought to defend suicide on particular occasions. Thus they will concede to us that suicide in general is culpable, but they contend that on particular occasions suicide is not only not culpable, but is rather an object of admiration and praise. Witness, they say, the glorious termination of the lives of those saints in whose blood are written the truths and doctrines of Christianity; witness, they say, the splendid conclusions of the career of those political martyrs who did not shrink from offering up their lives for the good of their country; witness, for instance, the patience, the endurance, the fortitude, the sacrifice of the Roman hero Mucius, who suffered his hand to be burnt as an offering to his devoted patriotism; witness the triumphant fall of that young Italian who preferred death in prison by cutting open with his own hands one of his arteries rather than betraying under torture the sacred cause of his association. These deaths, they say, have a halo of divinity about them. And some would go to justify such suicides as proceed from studious calculations, from studious casting up of accounts between pleasure and pain, like those made by Cato with Plato in one hand and the dagger in the other. If a man is once convinced that his life is not worth keeping; that he is disabled by some cause or other from accomplishing to the end the mission of his existence; that to live longer will be an infliction rather than a benefit to society; he is, they say, at perfect liberty to make away with his life. I need not stop to tell you, gentlemen, that such calculations are not unfrequently subject to be swayed by treacherous emotions and feelings. The statistics of our country, however, as you have seen, do not show a single instance of a martyr. I have also very grave doubts about the correctness of those figures which show the number of persons who have killed themselves to avoid the fatal agonies of some acute chronic disease. Very few, I say, among our suicides have fallen like Cato. Very many have fallen victims to the sudden vehemence of a tempestuous passion. Hence, I say, whatever weight this objection might carry in other countries, it carries very little weight in ours.

There is another objection to legislation. To punish a suicide means an encroachment upon man's natural liberty. But the founder of the Utilitarian School of Philosophy, that zealous advocate of liberty, has observed that to punish a suicide, one who has abused the sacred rights of liberty, is not invading liberty but strengthening its cause. You see then, gentlemen, that the measure I propose is not open to any sort of objection either moral or religious. But to have an amended and improved Penal Code is not all. I perfectly go with the learned lecturer when he says that we must strike the axe at the root of the evil. It has been said that suicide is generally the natural product of the condition of a society. If, therefore, you sincerely desire to repress suicide amongst yourselves, let your first efforts be directed towards enfranchising your society from those conditions, those arrangements which are calculated to engender inclinations to commit self-murder. The question then resolves itself into this—Does Indian Society contain within itself such elements as tend to generate such wicked, such unnatural propensities amongst its members? There are some who call themselves nationalists, who are so conservative that they will not see the dark blots which stain the face of our society. On the contrary, they will struggle hard to maintain as best those archaic institutions which have descended to us from our Aryan ancestors. I will yield to none in my respect for the great Aryan name, but I shall prove false to that name, false to myself, false to my country, if I conceal from you the conviction that, notwithstanding the flood of light which English education and English civilization have cast upon it, our society is still the hot-bed of such wicked, such unnatural propensities. Nowhere in the world, I say, do freaks, dissatisfaction, discord, heart-burnings grow and flourish so luxuriantly, as among the females cooped up in a Hindu joint family. To no person under the sun does the world appear so dreary, life so miserable, so desert-like, as to an Indian widow. Do you wonder then that under such circumstances, such conditions, women form nearly five-sixths of the entire number of suicides in Bengal. I say they, if you heartily desire to put down suicide in your country, direct your attention to the economy of your society; hurl your philippics against those evils which, sitting like so many cancers upon it, are consuming its life and blood.

Mr. H. BELL said:—Mr. President and Gentlemen, I should not have attempted at this late hour of the evening to have detained you with any observations of my own, but I think it right to express my dissent from some of the remarks which have fallen from the gentleman who has just sat down. My friend wishes to make suicide more ghastly, and he also wishes to ask the legislation for more repressive measures to check it. I am quite sure, however, from the appearance of my friend, that life has gone so easily with him that he can entertain no very great desire to get rid of it. But you must remember that there are a great many less fortunate people in the world, to whom life is an insupportable burden of which they long to get rid; and it seems rather hard that the law should be invoked not for the purpose of alleviating their distress, but for the purpose of still further embittering a lot which is wretched enough already. The only part indeed of the learned lecturer's address in which I did not agree, was that in which he noticed with approval the fact that the Police were becoming much more active in instituting prosecutions against people who had attempted to commit suicide. I must say that I think the energies of the Police might be directed to very much better channels. Then with regard to the number of suicides. My friend has referred to the ancient Jews and Romans, and he thinks that suicides are much more frequent now than they were in those early days. But upon what data can we base a comparison? We have no sta-

tistics of the number of suicides committed in those early ages. The ancients had no statistical officers; no Sanitary Commissioners; no village chowkedars to enquire into and record the death of every unfortunate person who voluntarily relieved himself of the burden of life. A few remarkable instances alone have come down to us. But we know from history that there was a period when suicide was almost the fashion at Rome. For we must remember that suicide was not in former days a crime. The Hindu law in some cases actually inculcated it; and it is only within the last 1,500 years that it has been branded as a crime even in European countries. The learned lecturer has alluded to the fact that suicide was regarded as so serious an offence in England that it used to be visited with the confiscation of the property of the person who committed it. But that law no longer prevails even in England, and an attempt which was made in 1857 or 1858 to introduce that law into India fortunately failed. One of the most luminous decisions which Sir Barnes Peacock gave in the old Supreme Court was upon the question whether the law which then prevailed in England should be applied to India; and it is owing to that decision of Sir Barnes Peacock that one of the most intelligent and charitable ladies in Bengal has been left in possession of the large estates of her husband, a lady whose name can never be mentioned without the deepest feeling of honour and respect. I mean Maharanee Surnamoyee. Had the English law been made applicable to suicide in India, that lady would have been deprived of the whole of her vast property, and the people of Bengal would have lost an example of charity and munificence which has rarely been exceeded in any country. My idea, therefore, is that in dealing with suicide we should not attempt by legislative enactment to make more wretched the life of those who are already sufficiently miserable; but that our aim should be to remove the causes of unhappiness and to make people generally as happy and contented with life as my friend opposite seems to be.

The VICE-PRESIDENT (MR. BEVERLEY) said that had it not been for the lateness of the hour, Dr. McLeod's very excellent paper would, he thought, have furnished matter for a much lengthier discussion. It might be possible to bring up the subject again at some future meeting of the Association; for the present, however, he could not venture to detain the audience longer. Among the many points of interest raised by the paper, two only had been referred to in the course of the discussion. The first was the very general and remarkable preponderance of suicides among females as compared with males. From Dr. McLeod's tables, it appeared that, whereas in England there were three males for every female who committed suicide, in India there were nearly two females for every male. In other words, suicide was six times as prevalent among females in India as it was in England. This, he thought, must be to a great extent attributed to the position of wives and widows, and particularly of Hindu wives and widows, in this country. This alone was an important social fact, and the Association was indebted to Dr. McLeod for having drawn their attention to it. The other point had reference to the possibility of discouraging the practice of suicide by legislation. He (Mr. Beverley) was aware that repressive measures by way of posthumous dishonour had been tried—and with a certain amount of success—both in ancient and modern times. But such measures were hardly in accordance with the spirit of the present age, and he did not believe that any such repressive action had any considerable effect in the long run. Dr. McLeod had told us that the number of suicides committed every year was a pretty constant quantity. So, as Dr. Guy had shown, was the number of executions for murder, a crime which even capital punishment seemed

to have no effect in reducing. It was a mistake, however, to suppose that suicide was not a common practice among the ancients. Amongst the Romans under the empire we know that it was a matter of almost everyday occurrence. The fact was that wherever men believed in a blind fate or destiny, they felt that their lives were their own, to do what they liked with. It was only when men came to believe in an intelligent Author and Disposer of human affairs that the value and responsibility of life came to be appreciated. And thus it was that suicides had largely decreased with the spread of Christianity, which denounced both the cowardice and the selfishness of the practice.

In conclusion Mr. Beverley felt sure he was only expressing the sense of the meeting in returning to Dr. McLeod its warmest acknowledgments for the most able and exhaustive paper which he had just read. The labour which it had involved was shown by the series of twenty-two tables which he held in his hand. It was indeed one of the most valuable contributions that had ever been made to the Association, and he begged to assure Dr. McLeod that it should appear at an early date in the Society's *Transactions*.

ECONOMY AND TRADE.

1.—*The Calcutta Economic Museum.*

By the Hon'ble J. B. PHEAR.

[Read on the 24th July 1876.]

Between November 1872 and 12th February 1873 some correspondence passed between the late Lieutenant-Governor (Sir G. Campbell) and myself, relative to the formation at Calcutta of a museum of the economic products of Bengal. A few days later in the month of February (I believe without any knowledge of this correspondence), the late Mr. Heeley proposed to the Lieutenant-Governor to make a collection of, and to report upon, the food-stuffs of this province, and in July Colonel Hyde also independently advised the forming of a collection of its fictile clays and freestones.

In view of these communications, at the end of the year 1873, Sir G. Campbell invited Colonel Hyde, Mr. Heeley and myself to act as a temporary Committee, to consider the general scheme and to devise a working plan for carrying it into effect, though at first only on a small scale by way of a commencement of the undertaking.

After some delay, a meeting of this temporary Committee took place, and suggestions for the appointment of a Central Committee, the constitution of its establishment, and the general plan of its work were put into writing by its members and transmitted to the Lieutenant-Governor.

And finally, on the 7th April 1874, Sir G. Campbell issued the resolution which constitutes the Economic Museum's Charter of foundation.

On the 10th April the Committee of gentlemen thus appointed met, and did me the honor to elect me its Chairman; it also au-

thorized me to engage a small office staff. And at a second meeting of the Committee, held on the 15th April, Mr. H. H. Locke was appointed Secretary. At the same time Colonel Hyde, Dr. Kanailal De, and the Chairman were appointed an executive Sub-Committee.

The machinery so set on foot, though as large as the means placed at the disposal of the Committee would allow, was even at the outset barely sufficient for its work. And the Government was obliged at once to make a grant of Rs. 2,000 to meet the ordinary expenses of collecting specimens during the first year.

At the beginning of 1875 it was found necessary to add to the establishment, to increase the salaries of the Secretary and of two of the subordinate servants, and also to raise the grant for annual expenditure for specimens to Rs. 3,000. Afterwards a further addition was made to the establishment. And almost simultaneously, on the occasion of the unexpected death of Dr. Dutt, the firstly appointed Assistant Secretary, two Assistant Secretaries, at lower salaries, were substituted in his place.

That this growth of the establishment and increase of its expenditure was inevitable, will, I think, be perceived and acknowledged, if the nature of the undertaking and the progress which has been made in it, is fairly looked into and considered.

The small office staff first appointed was for a time engaged in receiving, cataloguing, and arranging specimens presented to the museum by the Government of Bengal or sent in by several private contributors, and in preparing the museum building for the reception of the mofussil productions; and this work went on somewhat slowly by reason of alterations in the premises, which were being made simultaneously therewith under the superintendence of the Public Works Department in order to fit them the better for the purposes of the museum.

Meanwhile, steps were taken by the Central Committee to have Local Committees established in various mofussil stations, and through them to commence the work of collection. A memorandum was drawn up explaining the scope of the museum, the functions of the Local Committees, and the work which they would be expected to do when appointed. And this with the sanction of Government was sent down to certain selected districts, and the district officers were requested to nominate the members of their District Committees accordingly.

I should here say that the practice followed in endeavouring to put the Local Committees in action is very simple and intelligible. As soon as a committee is gazetted (generally the same day),

the Secretary of the Central Committee writes to the Magistrate of the district as follows :—

“The Local Committee for your district, as recommended in your letter noted in the margin, having been approved of by the Lieutenant-Governor and duly gazetted, the Central Committee will be glad if you will commence the work which Government wishes should be done for this museum by its Local Committees, as early as practicable.

“2. The first thing required is a list of the economic products and industries of your district. It will be much more convenient if you will furnish me with this list before your Committee begins to collect any actual samples, inasmuch as, with this list before them, the Central Committee will be able to send you precise instructions as to the particular products they would wish your Committee to procure, the quantities of each required, and so forth.

“3. Please do not delay the despatch of your list by any desire to make it absolutely or even approximately complete. A first list of the best known and most easily procured products can be supplemented by you at any time by further lists of those which are less familiar, and the furnishing of the lists by degrees in this way will probably be more convenient to yourself and to your Committee, and it will certainly enable us to begin the work sooner than can be done in any other way.”

Before receiving this letter, the Magistrate must of necessity, except in the earlier instances, have previously received the resolution of 7th April 1874, the memorandum of 21st May, 1874, and the Government reminder of 26th September, 1874. This letter, therefore, ought to find him fully informed as to the aims of the Government and the functions of the Local Committee, and therefore prepared to promptly comply with the request preferred in it. But, for the greater certainty's sake, copies of these papers are also enclosed in the letter itself.

And in a few notable instances the Committee has met with the most loyal co-operation in the mofussil. The district officer has taken care to have a good Secretary to his Committee, to instruct the members, and to infuse some earnestness into their operations. When this is the case, excellent lists are sent up, often accompanied by valuable information.

As soon as the list in each case reaches the Central Committee, the Local Committee is informed in reply which of the products in the list are to be procured, and what quantities of these products respectively are required. And next, on receiving a return-intimation of the cost of procuring and of sending to Calcutta the pro-

ducts which are thus asked for, the Secretary of the Central Committee transmits to the district officer the money requisite to cover it. The products required are then usually sent up without much delay.

[Mr. Phear here complained at some length of the apathy manifested by some of the District Officers in complying with the requisitions of the Central Committee.]

From the foregoing explanation, it will be easily understood that the collection of products in the museum, so far as it has yet been carried, is by no means complete; and is at present only remotely representative of the province. It has, however, already attained considerable bulk, and is in many respects very interesting.

Every specimen is entered in a day-book catalogue and numbered in chronological order, according to the date of its arrival. The total number of specimens is now 7,461.

Endeavour is always made to secure that the quantity or magnitude of each specimen obtained should, so far as possible, be large enough to admit of subdivision, in order mainly to facilitate the development of the museum in a double form, or rather with a duplicate arrangement of specimens, namely, an arrangement *raisonné*, and an arrangement by districts.

Under the one arrangement *all* the specimens of products, from *all* the districts of Bengal alike, are placed in a considered order of sequence according to specific characters, so that, to take an example, the paddies of any one district are grouped with the paddies of all the other districts, and the paddies which bear the same designation, wherever they come from, stand together. Under the other arrangement, the specimens of products are grouped geographically according to the districts from which they have been sent up.

The first arrangement when completed will afford a comparative exposition of all the products of the province, for it will have effected a comprehensive arranged collection of all the products as a whole, and will also furnish to the eye, in the case of each product, a comparison *inter se* of specimens drawn from each of the several constituent districts. Under the second arrangement, the products of each district will be exhibited by themselves, and means will thus be furnished for comparing the productive efficiency of district with district.

I will endeavour to give you a slight sketch of the state at which the collections have up to this date arrived, premising that they are growing daily, and I will commence by describing them shortly under the arrangement *raisonné*, so far as our weak office staff has as yet been able to carry it into effect.

They consist in the aggregate of cereals, maize, millets, pulses, oil-seeds, oils, tallows, wax, gums, resins, dyes, drugs, condiments, farinaceous stuffs, sugar, spirits, vinegar, pickles, preserves, teas, opium, bhang, tobacco, salt, freestones, slates, limestone and lime, coal, charcoal, ores and metal-ware, clays and fictile products, silk and silk goods, cotton and cotton goods, fibres and textile fabrics, paper stuffs and paper, leather, harness, shoes, chicks, mats, reeds, hugla, bamboos, and woods. And it is proposed to add to these a collection of fruits and of fishes in plaster-casts.

At the head of this list, and first among the cereals, of course, comes *paddy*. There are over 1,400 different specimens of it in the museum, almost all in an excellent condition of preservation. Probably there does not elsewhere exist an equally extensive and valuable collection of this cereal.

It is scarcely necessary for me to remind a Bengal audience that of paddy, or the rice grain, there are in this part of India three well recognized classes—the *Aus*, the *Amun*, and the *Boro*. They can be shortly distinguished as follows:—

The *aus* is sown between the middle of March and the middle of April, and is cut in August and September. It does not grow in water; is coarse, and is not largely produced. The *amun* is sown between the middle of May and the end of June. It requires showers of rain even in its early days, but the young plants should be strong before the regular rains set in. It is cut in November and December, and constitutes the staple crop of the country. The *boro* is sown in January and February, or somewhat earlier; is planted out in low marshy places, and is cut in April and May. A very accurate and interesting description of rice cultivation in Bengal is given in the *Statistical Reporter*, pages 21 and 45.

The number of varieties of paddy, in the three different classes together, is something enormous, when compared with anything of the kind to which we are accustomed in England. Ten or a dozen names each would probably cover all the different sorts of wheat and barley with which the practical English farmer is brought in contact. But we have already in the museum as many as 1,104 names of paddies, and though very many of these are merely local synonyms, a large number unquestionably correspond to intrinsic and seasonal distinctions.

The obvious differences in the grain itself are indeed very remarkable. In colour the specimens range from a bright golden hue through almost every gradation of tint to black. And in regard to size, they vary from the dimension of a large mustard seed to those of a cantaloupe melon seed.* Some 200 or 300 of the samples of

* Ratio of largest to smallest = 3·74.

paddy in the museum have been tested by weighing: and of these the smallest furnished $203\frac{1}{4}$ paddy grains to the half-drachm, the largest $54\frac{1}{4}$ grains.

The husked rice, or rice proper in the understanding of English people, exhibits, necessarily, differences of size corresponding with those of its parent grain. It also varies in tint from a pure white colour to a dull red. The proportionate outturn of rice to the unhusked paddy from which it arises depends both upon the sort of the grain and the process of husking pursued. Probably also upon other elements. Dr. Buchanan Hamilton says it amounts to a little more than one-half.—Vol. II., p. 824. And the writer in the *Statistical Reporter* above referred to, gives the proportion of “rice” to “paddy” at from half to two-thirds. (p. 19.)

We have not yet ascertained the external conditions of season, situation and culture, which give the different sorts their respective economic values; and investigation of these points forms part of the work which is yet reserved for our local Committees.

We also intend to procure experts' opinion on the different qualities of the paddies, and on their respective market importance.

When the museum is complete, all relevant information on these and like heads, or a reference to the place in the descriptive catalogue where it may be found, will, in the case of each product, be placed against the sample.

We pass on naturally from paddy to the three cereals *par excellence*, wheat, barley and oats, with which alone the cultivators of land in England has any concern. In this province, however, they take a very low place in the ranks of food-stuffs.

Wheat has come to the museum from almost all parts of the Presidency outside the delta. The specimens sent from Shahabad and Patna exhibit a good quality of grain, but the rest generally appear to be very inferior.

The area which has yielded us *barley*, is somewhat more extended than is the case with wheat; but in this grain, also, Shahabad and Patna easily carry away the prize.

Much fewer districts have as yet given us *oats*, and in each instance the grain appears to be of very poor quality.

Leaving this group we come to *maize*, which, in Bankoora and other highland districts of Bengal, seems to constitute one of the chief articles of food during a considerable part of the year.

Next in order are arranged the *millets*, all the small food-corns being comprehended in this group. Although there are several sorts of them, it is worth notice that they are all culmiferous, and do not comprehend any of the buckwheats, which constitute the

lower food-grain of Europe. Dr. G. King tells me that all along the Himalayas the buckwheat (*Fagopyrum esculentum*) is cultivated at high elevations as a food crop; and that *F. emarginatum* is also grown, but not so plentifully. Neither of them, however, has yet come to the museum.

Of these small food-corns, Roxburgh remarks:—"It is probable that through the whole of Southern Asia, as many of the inhabitants live on the various kinds of dry or small grain as upon rice, and they are reckoned fully as wholesome as that is."

As a rule, they are prepared for being eaten much in the same manner as rice is; that is, they are husked in various ways, parched, boiled, and so on; but are seldom, in Bengal at any rate, ground into meal. The same is the case with the pulses, to which we shall come presently. In Europe, on the other hand, it is almost universal, in regard to all corns and pulses alike, to prepare the seed, whatever it may be, for use as food by grinding it into meal. This difference of usage probably springs from differences of character in the dominant food-grains of the two regions—rice and wheat—which renders the grinding process specially advantageous and appropriate to the one and not to the other, and has led to the greater efficiency of the grinding instrument, and greater readiness in applying it in the one case than in the other.

The millets of the museum may be roughly arranged as follows:—

<i>Eleusine coracana</i>	Marua, kadua, kodo, kodum, (query of the hills), raggi (of the West Mahomedans).
<i>Holcus sorghum</i>	} The various sorts of jooar, janera, &c.
„ <i>bicolor</i>	
„ <i>cernuus</i>	
<i>Holcus spicatus</i> , Syn.	} Bajra.
<i>Panicum spicatum</i>	
<i>Panicum miliaceum</i>	China.
<i>Panicum italicum</i>	Kaun, kangni, also pelaga (by hill tribes), the smallest of culmiferous seeds, but the quality is good.
<i>Panicum</i> ———	Tengoonee.
<i>Panicum miliare</i>	Gandli (by the Sonthals of Midnapore).
<i>Panicum frumentaceum</i> , very like <i>Holcus sorghum</i>	} Kheri, sawha, sawan, eaten by better classes than marua or gandli (Mr. Harrison, 833).
<i>Paspalum scrobiculatum</i>	
Uncertain	Koda.
Uncertain	Makrah, Lohardugga, very tiny.
Uncertain	Maruah, Darjeeling.

The *pulses* which, with rice, constitute the staple food of the people of India, are exceedingly numerous. They are most widely known under the generic designation of *dal*, which denotes the split condition in which they are commonly prepared for use, the word *dal* being cognate with the German *theilen* (to divide) and the English *deal* and *dole*. The combination of the pulse with the rice forms so complete a nutritive material that experience of it has led the people to use the phrase “dal-bhat” as equivalent to food generally.

Maskalai or *Phaseolus radiatus* stands at the head of the list for Bengal.

The familiar *gram* (*Cicer arietinum*) and *arhar* (*Cylisus cajan*) come to us from all quarters and occupy a large space among the pulses. There are also several sorts of peas and vetches. A kind of haricot, called *barbatī* (*Dolichos catjang*), which we have as yet received only from Orissa and the western high districts of Bengal, is a pretty little bean. And a *katari*, by its large size, contrasts very markedly with its neighbours.

On the whole, the pulse-case is quite as characteristic of the country as those which display the paddies, and deserves as close an inspection.

The *oil*-producing seeds and substances are numerous beyond the possibility of detailed description in this hasty sketch. They range from the seed of the *mahwa* (*Bassia latifolia*) through the *rana*, *safflower*, *linseed*, *mustard*, *sesamum*, &c. down to the tiny poppy-seed. A neighbouring case exhibits the *oils*, which are the products of these different substances respectively, and it is interesting to compare there the like oils from different parts of the province, and also the different oils *inter se*. The variations in tint and clearness are remarkable.

The *gums*, *resins* and *waxes* of the province are at present, perhaps, imperfectly represented in the Museum, although the specimens already collected exhibit sufficient variety to indicate how important a department of products is comprehended under this head. The most prominent among them are the well-known *india-rubber*, *lac* in its various states, and *catechu* or *khair*. How large the gaps in our collection are, we are not yet ourselves in a position to judge.

The Government of Bengal recently entertained the design of effecting separately an exhaustive collection and accurate identification of all the gums and resins of the province. But it was pointed out on that occasion by Dr. George King that this work could only be properly done by an expert provided with a competent staff, and travelling carefully through the vast jungle districts

of Bengal, *i. e.* the forest tracts of Chittagong, Cooch Behar, the Western Dooars, British Sikhim, the Rajmehal hills, and all the wild country southwards of the Ganges, to the frontier of Madras and the Central Provinces. Through the agency of forest and district officers it is always possible to make collections of products to a certain partial extent, and these, when got, speak for themselves. But it is seldom that mere information obtained through the same channel is complete, or in any high degree trustworthy.

It must be admitted, I am afraid, that up to the present time materials do not exist for a definite statement of the full extent of the resources of Bengal in respect to such natural products as gums, resins, waxes, dyes, jungle silks, and so on; or for any comparative estimate of the values, qualities, and quantities which they bear, and at which they might be introduced into the market. The actual specimens which are being collected in the museum will, however, answer for themselves, so far as they can, with unfailing accuracy; and in course of time—I hope a short time—the Central Committee will be able, by the expedient of specific questioning directly pointed to these, to ascertain much of the circumstances and conditions under which they are produced and to explore round them (so to speak) for other like products.

Drugs are in a better situation than the foregoing. A very considerable number of them have already been sent up to us, and we shall soon have a very complete and instructive collection.

• Of *condiments* the name is legion. The staple food of the country is distinguished by the absence from it of all stimulating qualities, and the people have been forced to supply the defect by additions from outside. Fortunately the vegetable world of the tropics is rich in irritant and aromatic principles; and potential curry-stuffs and their cognates are everywhere to be found in great abundance. I may name, to illustrate the contents of our cases, the universal *chillie* of various sorts, the *betel-nut*, *coriander*, *methi*, *kalijeera*, *jain* or *jawan*, *ginger*, *turmeric*, *garlic*, &c.; of *black pepper* it is strange that there is but one specimen, and that is from Shahabad.

Next in order come the *teas*. And what shall I say of them more than this, “Go and see them.” Bottle after bottle ranged on the shelves, taken at random, looks simply perfect of its kind, and I can readily believe that the tea of this province has now nothing to fear in competition with its Chinese rival.

Opium, *ganja* or *siddhi*, and *tobacco* fill a case by themselves. There seems to be good ground for thinking that tobacco culture in Bengal is capable of being developed into a very considerable

industry. The intrinsic quality of the leaf grown in many districts is such as to fit it for a high place even in the European market. But hitherto it has been found impossible to induce the ryot to take the care in its cultivation and preparation which is necessary to make it suit the requirements of foreign consumers. Probably nothing short of repeated practical examples will avail to persuade the cultivators to replace their old methods with new.

It is noteworthy that *ganja* is the leaf and flower of the *Cannabis sativa*, or true hemp of Europe. Yet in India it is the narcotic properties of the plant only which are valued. No use is made of the fibre of the bark, although it is equally strong when carefully prepared as the hemp of Russia (see Roxburgh).

The *silk* cases are very instructive. We find there the beautiful produce of the domesticated worm sent up from Purneah, Moorshedabad, Beerbhoom, and so on, contrasted with the coarser and more variously tinted cocoons of the jungle. It is not generally known how numerous are the kinds of *lepidoptera*, whose cocoons go to furnish the silks of commerce. There seem to be several species of *Bombyx*, if not of other genera, among the domesticated silk-moths of China, India and Europe. The true tussers are again a different group from these, and comprehend, I believe, members of the genera *Actias* and *Antheraea*. And besides those, are many others which are found to yield a good spinning material.

In the case of the domesticated and the better jungle sows, the delicate thread or silk fibre of the cocoon is reeled off. But in others the substance of the cocoon is carded like wool, and the final silk thread is spun from the carded material.

These differences of origin and treatment give rise necessarily to great differences in the appearance of the cocoons, raw silk thread, and woven fabric. Thus, the tussers and other jungle silks exhibit a long range of colours, chiefly greys and tawny yellows. In some, too, the raw silk appears almost as fluffy as wool, and the texture of the woven article resembles that of a coarse cotton fabric.

The best tusser specimens of the native looms are very good, and of considerable commercial value.

It is an advantage that the indigenous specimens, both of cultivated and wild silk, stand almost in juxtaposition, and can be readily compared with thirteen specimens of the best raw silk reeled in Europe, which were procured by Mr. Massa and presented to the museum by the Government of India. The latter are certainly distinguished by the fineness, evenness and apparent strength of their gossamer threads, and their freedom from colour.

At present there is some seeming confusion of the various silk specimens. But, as opportunity serves, they will be all arranged; the species of the producing moth identified for each of them, and information as to the habits and food of the caterpillar, locality and other material circumstances attendant on the production, will be coupled with them.

In all, there are 272 specimens of silk in its different stages, from the cocoon to the cloth. But this number will eventually be enlarged.

The *cottons* of this country are preceded in the cotton case by a valuable set of specimens of English twists, most useful here for the purposes of comparison. Immediately after these twists come numerous specimens of cotton bolls, of indigenous growth, from all the outer portions of the province. The finest and most beautiful of these form a well-displayed group from the Garo Hills, which was presented by the late Lieutenant-Governor, Sir George Campbell, as the first contribution to the museum on the date of its institution.

The variety in the cottons, cleaned and uncleaned, is very great. In general, it may be said that the cleaning is imperfectly effected, and that the staples are short. But there is nevertheless a great display of excellent cotton fabrics, notably from Dinapore and Patna, woven from the country products.

The best specimen of raw cotton in the museum has been estimated by an experienced judge as worth from Rs. 27 to Rs. 28 per bazar maund in the Calcutta market for exportation to England, provided it can be produced in sufficiently large quantities. But this is evidently an exceptional sample, and is probably the produce of garden cultivation.

The districts of the Chittagong Hills and Tipperah send up a very peculiar cotton fabric termed a Kookee galeecha. It presents on one side a surface of densely packed tufts of cotton, each fastened tightly by an invisible thread-ligature to a base of coarse cotton canvas. It forms on the whole a strong and beautifully light quilt or mattress, a sort of artificial fleece.

Most of the *dye-stuffs* which are used throughout the country are instanced on small pieces of dyed cotton cloth. The series is very interesting. Perhaps of all the colours, a yellow, from turmeric, is the clearest and best.

On leaving the cottons we come to the *raha* and are at once struck by the extraordinary length of its hanks. A beautifully delicate specimen of the raw fibre prepared for spinning is the product of the Botanical Garden, Saharunpore. There are, I think,

no specimens from Bengal Proper. It is still unfortunately a question whether or not this remarkable material is capable of being used profitably for textile purposes, because the difficulty which attends upon the hackling, or separation of its fibre, has not as yet been satisfactorily overcome; but that the fabric formed of it possesses marked excellences is shown by the two or three and twenty pieces manufactured at Bradford and exhibited in the Museum.

Of the *jutes*, which are the raw material of perhaps our most flourishing Bengal industry, the Museum has a very fair collection, including many of the specimens procured by the members of the Jute Commission, which was appointed by the late Lieutenant-Governor. But unfortunately these latter are not always accurately named, and are not precisely connected with the localities in which they were produced.

Since the days of Roxburgh and Buchanan-Hamilton, it has been well known that the Bengal jute or pát is the fibre of the bark of two species of the *Corchorus*, namely, *Corchorus capsularis* and *Corchorus olitorius*. Another fibre called by the Bengalis *mesta pát* is produced from the bark of the *Hibiscus cannabinus*, and has often been confounded with the true jute.

It seems, moreover, that the fibre of the *Hibiscus*, while stronger than that of the *Corchorus*, and therefore the better adapted for ropes, is also less fine, and for that reason not so well suited for being spun into small strands. This difference led in practice to the appropriation of these fibres respectively to different purposes, and I believe that the *Corchorus*, mainly the *Corchorus capsularis*, now supplies the whole material for our jute factories. Some of the specimens of its stems, which are in the Museum, and even some of the hanks of its fibres, reach the great length of 14 and 12 feet respectively.

Gunny bags and jute fabrics in great variety of texture are placed against the raw fibre from which they are manufactured. But the museum staff has not yet been able to direct its attention to effecting a complete arrangement of the specimens.

A third well-known fibre of very ancient reputation, called in Bengal son or san (*Crotalaria juncea*), comes after the jutes. It is a leguminous plant, closely allied to the lupine, and often attains a great height. Some of the stems in the museum are 6 feet long. *Munj* (*Saccharum munja*) is also employed as a material for both paper and cordage. The length of the longest specimen in the museum is 6 feet. It comes from the Gya district.

There are again many other fibres, basses, and barks, which I have not time to refer to here, though I cannot refrain from mentioning a very curious specimen of a sack, presented to the museum by Dr. George King. It is simply the inner bark of a tree, *Antiaris saccidora*, one of the jack fruit family, stripped off unbroken and beaten out into a sort of felt cylinder. The mode in which it is made is thus well described in Lindley's Vegetable Kingdom, page 271: "From a species of *Antiaris* (called by Mr. Nimmo *Lapurandra saccidora*), sacks are made in Western India by the following singular process. A branch is cut corresponding to the length and diameter of the sack wanted. It is soaked a little, and then beaten with clubs till the fibre separates from the wood. This done, the sack formed from the bark is turned inside out, and pulled down till the wood is sawed off, with the exception of a small piece left to form the bottom of the sack. These sacks are in general use."

Paper-stuffs, perhaps, are not so well represented as they might be. Some of them, as munj, just mentioned, take rank also among good spinning fibres.

The few specimens of country-made paper, which have reached the museum, are certainly of very inferior quality; and if they are the best which native industry can produce, notwithstanding the apparent plentifulness of indigenous raw material, it is easy to see that the foreign commodity must be generally preferred even by Indian consumers. At the present juncture of public affairs, it is much to be desired that serious efforts should be made to ascertain whether an advancement of the local manufacture is economically practicable.

Leather, harness, shoes, slippers, &c. afford the materials for a limited, but very useful, industry.

Baskets, mats, and purda screens are appliances of most extensive use in the ordinary life of all classes of people in this country, and accordingly we find great ingenuity called into play in the making of them, and very varied materials utilized.

The *bamboo*, of course, takes the principal place among these. I need not attempt to specify its other multitudinous uses. The museum already contains many very fine specimens of this magnificent and invaluable grass.

From the bamboos we pass on to the collection of *woods*. Of these, the museum at present contains more than 600 specimens, and more are coming in from the jungle districts. The forests of Burma and of the Andamans, thanks to the kind labours of Mr. Theobald and of Major-General Barwell, are well represented.

But as yet few of the specimens have been identified and named, or the qualities of the woods tested. Probably, on this being done, some among them may even be found to be new to science, and it is certain that some valuable additions to the timber market will be made.

The collection of *pottery* and *fictile products* is limited to specimens of the different kind of wares made in the country, and is not intended to illustrate the state of native art. Seemingly the material has nowhere in Bengal attained any advanced stage of excellence; nothing that can be termed a porcelain is to be met with.

The *freestones*, *lime-stuffs*, *coals*, *ores*, and *metal-work* close the list of our collections at present, and deserve a full description. But unfortunately, I must now pass over these classes of products with this mere mention of them. I have on a former occasion written a short note on the native iron works of Chota Nagpore.

The very short period of time which now remains to me in Calcutta, before my departure for Europe, does not suffice to afford me the opportunity and leisure which I should need in order to give a detailed description *raisonné* of the existing collection, and to fully explain the objects which are sought to be attained in the development of the Museum.

I am thus compelled to leave the foregoing hasty survey bald and meagre as it is. And I can only hope that the short narrative which I have given of the manner in which the institution came to be set on foot, and of some of the results of the work which, during the last two years, has engaged the best efforts of the Central Committee, may serve to enlist the good-will and support of many, who are now either lukewarm towards the museum or even ignorant of its very existence.

A short visit to its halls—an hour's inspection of the arranged specimens—will do more to demonstrate the purposes of the museum, and the great political and commercial advantages which (provided it is zealously and intelligently carried out) must proceed from it, than I could do by any promulgation of this report.

The mere work of collecting specimens of the various products of the country has, it will be perceived, now reached a forward stage; a first instalment, more or less large, has been obtained from most of the districts and sub-divisions of the province. But the work which has yet to be done is of a nicer and more difficult kind than this. Hitherto there has been comparatively little need for method, precision, and informed discrimination on the part of those who do the work of local collection. It may be easily imagined

from the nature of the case that there is seldom, in any instance, room for doubt as to where the article sent up to us was produced, and this being known, the specimen, as I have before remarked, speaks of itself upon inspection for much besides. But the period is now fast approaching when the margins untouched, beyond the instalments spoken of, must be searched out, and, so to speak, realized; when the current losses of the museum from various causes must be supplied by the replacement of identical specimens, and when, above all, the requisite material for a descriptive catalogue—accurate, scientific and statistical—of the entire contents of the museum must be produced.

It was, as I have already remarked, mainly with a view to the better attainment of these ends, and for the relief of the district officers, that the collecting organization of the museum was put into the shape of a nexus of local committees spread over the country, and presided over by the district officers. A committee, I need hardly say, acts at meetings of its members held at prescribed intervals, and everything material that passes at these meetings is recorded with sufficient fulness in formally kept minutes. Even if the work of the Committee is so simple as that of merely collecting specimens of products, it should be distributed among the members. A note should be made in the minutes of everything undertaken by any member, and finally, all specimens collected, all reports and all answers proposed to be returned to inquiries of the Central Committee, should, before being forwarded to the Central Committee, be brought before a meeting of the Local Committee, there considered and discussed, and only actually transmitted to the Central Committee, after having been approved and sanctioned by the Local Committee. A correlative proceeding is invariably followed by the Central Committee itself in Calcutta, and in this way alone can any trustworthy results be obtained, beyond, at any rate, that limited range within which the specimens coupled with their home can speak for themselves. Committees, with their minutes, afford the only means by which, notwithstanding the shifting of district officers, continuity of work may be maintained. Through them complete division of labour ought to be effected, and the ultimate responsibility for correctness of information should be fixed on competent individuals and recorded, and its trustworthiness in effect deliberately affirmed. The district officer, as head of the committee, with official authority enough in the district to facilitate and protect its working, and able to control its composition, ought to ensure its efficiency, and ought to take care that it relieved himself from all task-work. But he should not assume to act for it, and in its stead.

No doubt, a district officer may himself be a true expert in the matter; he may take the most carefully directed steps for obtaining his information; he may be a most discriminating observer; he may check his results by the most judicious methods; and he may leave them open to subsequent testing and verification by keeping accurate contemporaneous memoranda. In that case, if he will make all this appear on the face of his report or minute, particularly if he discloses his methods and his grounds, the Central Committee will gladly accept his authority, or rather will be able to gauge, without further aid and with much confidence, the real value of his returns.

But when there is nothing to indicate whether or not these conditions have been fulfilled, or what the true basis of the information is, then the assurance that there has been a formal discussion and approval of it at a regular meeting of the Local Committee, and that the sources of the information were there minuted and sanctioned, and that they can at any time be reviewed, affords something in the way of a substitute. At least, it constitutes a tolerably good guarantee that the information was not "probably collected by some subordinate sent out from the district officer's office, and is probably inaccurate and worse than useless"—a supposition which only too often correctly represents the actual case, and for that reason serves to account for such answers as those which I have already cited in these pages.

I trust, however, with confidence, that the district officers will soon of themselves perceive that the work which has yet to be done for the Museum can generally by no means be carried out except through the machinery of the committees, and that they will zealously do all in their power to keep the committees in activity and to promote their efficiency.

Should this prove to be the case, the success of the Bengal Economic Museum will be assured, and the province will, at no distant period, have reason to be proud of having developed an institution which will probably be unique in the completeness of its representative and practical character—a universal dictionary in specie of the natural and industrial products of Bengal, with their principal economic incidents.

THE HON'BLE MR. BELL said that he had been asked to propose a vote of thanks to Mr. Justice Phear for the interesting paper he had read to them, and he did so with much pleasure. He dared say there were a great many amongst those present, and in that number he would include himself, who had known very little of the Economic Museum before they heard the able paper of Mr. Phear read; but after having heard it, he was sure they would agree with

him in thinking that the Economic Museum was very much indebted to Mr. Phear for its present state of efficiency and advancement, and, knowing as he did the zeal and energy which Mr. Justice Phear imparted, to all his undertakings, he could well imagine how disappointed he would continually be in finding that district officers in Bengal did not display the same interest in the project as himself. Mr. Bell then deprecated the censure that Mr. Phear had passed upon some of the District Officers and pointed out that in the midst of their heavy and responsible duties it might not always be easy for them to comply with the Central Committee's requests. Turning however, to the resolution which he had been asked to propose, he need hardly remind the meeting how much the Bengal Social Science Association was indebted to Mr. Phear. Notwithstanding the fact that his engrossing duties in the High Court—so engrossing, in fact, that but few of the Judges could ever find time to devote to other subjects—occupied so much of his attention, he had always been of the greatest help to the Association from the very first moment of its existence. So far as Mr. Bell was concerned, it was peculiarly gratifying to him to be entrusted with the proposal of a vote of thanks to Mr. Phear, because he had known him for more than a quarter of a century, and it was to him a matter of no slight gratification and pride that, during that long period, he had been able to esteem Mr. Justice Phear as a friend. In losing Mr. Phear, we should not only lose a most conscientious, painstaking and able Judge, but we should lose a man who was always ready to devote his time and abilities to all questions that concerned the prosperity and well-being of the country. The members of the Social Science Association were under special obligations to him, and he felt sure that the resolution with which he had been entrusted would meet with their unanimous support.

RAJA HARENDRA KRISHNA BATTADUR, seconded the resolution.

DR. K. M. BANERJEE supported the resolution, and was quite confident it would meet with the unanimous approval of all present, in consequence of the great benefit the Association had derived from Mr. Phear's valuable co-operation, and also on account of his untiring efforts to resuscitate the Association at a time when it was on the brink of sinking—efforts which, he was glad to say, had been crowned with success.

BAHU GRISH CHANDRA GHOSH also supported the resolution, and alluded at some length to the distinguished qualities of the Hon'ble Mr. Phear as a Judge of the High Court.

HIS HONOR THE PRESIDENT said that before putting the resolution to the vote, he would like to make one or two observations of the briefest character, in reference to his excellent friend who had just addressed them for the last time. This not being a public meeting, it was not the proper place to remark on his administrative or judicial conduct as a Judge, though they all knew that no Judge ever commanded the confidence of European and native alike as Mr. Justice Phear did. But as his services, which had been duly appreciated, were to be publicly recognised at a meeting shortly to be called, His Honor would not detain the meeting longer on that subject, but allude principally to Mr. Phear's services to the Social Science Association, which had been dwelt upon by the previous speakers that evening. Notwithstanding all that had been said by his hon'ble friend, Mr. Bell, he was, for his own part, not disposed to pity the over-worked Collectors when they were engaged in the task of collecting specimens for the Economic Museum, because he considered it to be the essential duty of these officers to be well acquainted with the natural products of the districts of which they were in charge, and to give all necessary information on the subject,

and he also hoped that the native gentlemen of the country in which it was their good fortune to be born and their destiny to live in, would also co-operate with Government and the Committee in affording every assistance in their power to the Economic Museum. But leaving these aside, and looking at the subject of the resolution before them—the services which Mr. Justice Phear had rendered to the Museum, he thought he might safely count that gentleman among the many Englishmen who had done their best for the welfare of the country in which they lived—such as David Hare, Drinkwater Bethune, Lyall and D. L. Richardson; and he was sure they would all join in bearing testimony to these services.

THE HON'BLE MR. PHEAR said that he had been so entirely taken by surprise at the resolution, that he did not know how to thank them for the cordial manner in which it had been received. He could not say that he would ever come back to this country again, and it was therefore likely that he would be severed, both by time and distance, from the Association; but with it his best wishes would ever go, and he thanked them most cordially for the kind vote. In conclusion he would ask that he be not required to resign his connection with the Association, but that, though distant, he might yet continue a member.

2.—A Few Facts concerning Village Life.

*By the HON'BLE BABU ISSER CHUNDER MITTER, ROY
BAHADUR.*

[Read on the 25th July 1877.]

India, famous in the olden time for what was termed its barbaric pearls and gold, famous for its Pagoda trees during the advent of commercial Europe, has nevertheless been found to be a poor country. Notwithstanding riches and splendour among a few of its princes and nobles, there is almost one dead level of poverty and misery among the masses. The condition of the ryots and of the poor generally, is therefore a subject not undeserving attention. I accordingly propose, in a series of papers, to give such facts concerning village communities as have come under my observation.

Calcutta, built upon a swampy alluvial formation, once noted for its damp, reeky, odorous and insalubrious condition, is now reported to be one of the healthiest places in Bengal. Its death-rate now compares favorably even with the recorded death-rate in some of the best towns in Upper India. On the other hand, the reputation for healthiness of many places in Bengal and the North-West has more or less deteriorated. Fever in different forms commits its ravages for six months of the year; cholera numbers its victims by tens and hundreds at different periods; and chronic diseases, slow in their operation, have their triumphs all the year round, over ill-nourished, enervated and enfeebled constitutions.

There can, I believe, be no question that the public health of most villages in the interior has for some time past been found to have sadly suffered. Something has been done to alleviate this state of things, but much remains to be done, and an enquiry into the causes of the general decline in the salubriousness of villages cannot but be attended with profit. Towards this end, the collection

of facts affecting the general health of village communities must always be of some value; and such facts as have come under the observation of men who reside or have spent years in places in the interior, ought to be brought to notice.

It cannot be uninteresting also to note whether, notwithstanding the decline in their sanitary condition, villages have not improved in other respects; whether or not there has been any progress in the material condition of the people; in the construction of roads and communications; in trade and commerce; in arts and general education. Calcutta has made considerable progress in all these matters: it must be to some advantage to know how much of this progress has a counterpart in villages in the interior. A collection of facts bearing upon these questions cannot but be useful to those who have at heart the amelioration of the condition of the people at large.

The main subjects affecting the weal of village communities may be classed under some such heads as the following:—

Health or Preservation of Life.

Land and Crops.

Indigenous Arts and Manufactures.

Internal Trade and Commerce.

Roads and Communications.

Education.

Charities, &c.

The field is a large one, but if every one, who has any knowledge or experience of facts bearing upon the subjects adverted to, should contribute his mite of information to a general stock, a great advance would have been made towards a proper understanding of the condition of the masses, who form, as it were, the basis of society.

It is generally asserted that population is increasing, and has increased to a considerable extent; so much so, that it is likely to outstrip the limits of production. A belief previously existed that the population of the Bengal Provinces, including Assam, comprised some 42 millions of souls; the last census showed that the population numbered above 66 millions. For the 42 millions there was no reliable foundation whatever; for the 66 there is the census which was conducted with especial care. It is certainly true that the people of this country always look with suspicion on efforts made on behalf of Government to collect statistical information, and it may be feared that strictly correct figures are sometimes withheld; in fact only the other day a public officer questioned for a portion of a district in Behar the accuracy of the census; but nevertheless when it is recollected that a village population seldom comprises

disturbing elements in the nature of floating members, that the members of the village community are generally well known to every village officer or village head, when it is known that intelligent village residents were mostly employed in the work of enumeration, and that the work was supervised in particular by local officers, we may confidently assume that the census of villages was in the main correct. We must, however, wait till we have another census to know in what ratio the population is increasing; and this knowledge will assist greatly in determining many questions affecting the health and well-being of vast communities spread throughout the length and breadth of the country.

The general belief is, as has been said, that population is increasing: this belief may be considered sound. With such security to life and property as was never realized under past dominations, with increased trade and commerce, with facilities for communication and transport which did not exist in days gone by, with increased produce and increased prices, the ryot is certainly, to some extent, better off than he ever was before, and as there are very few restraints upon marriage, the tendency naturally is to an increase. But an over-increase of population must always be attended with evil results; when population outstrips the limits of produce, misery, the most direful, must come on apace. There are some natural checks to population which none can combat. Disease and death destroy what the fructifying influences of nature build up, and this process must always be at work in the dispensation of a wise Providence. But because disease and death must have their work, there is no reason why we should sit with folded hands and not make an effort to remove their preventible causes, to do all that should be done to help nature in vivifying and preserving the life it has given. We should be as guilty in seeing fever or cholera or other fell disease commit its ravages far and wide, and not making an effort to remove or helping towards the removal of the causes which bring on such diseases, as in seeing famine devastate the land, and not stirring to arrest its progress if we have the power to do so, but looking on it as a natural visitation, tending to check an overgrown population. The world is still wide enough to receive an ever-increasing population, but for the removal of the causes of disease we must look closely to the conditions under which populations exist.

Now for a few facts. The obstructed drainage of a village is one great element of its unhealthiness. I must not here omit to mention that attention was first drawn to this subject by Raja Digamber Mitter, c. s. 1., in connection with his enquiries into the

causes of epidemic fevers. Every village has some defined drainage channel connected with other like channels, a streamlet or a swamp. In many instances I have seen such channels clogged or obstructed in various ways. The owners of lands on either side of a channel have perhaps encroached upon it, embanking the lands bordering on the channel, and making slow advances year by year into its bed: the channel has thus become narrower by degrees and beautifully small in the end, and the water-way is rendered insufficient for the free passage of water. Roads have been often constructed across these drainage channels. The necessity for roads has been always great, and the funds, till lately, small. In the construction, the process of embanking had always been a matter of the first importance, and the water-way, where the roads crossed the drainage channels, least thought of. If thought of, the funds stood in the way. Masonry works involved a large expenditure, and with a view to economy the necessary culvert was constructed with as little width of supporting wall as possible, and the smallest water-way conceivable became the result.

Again, the drainage channels are generally connected with a streamlet which finds its way eventually into a swamp or a river. In some instances the streamlet is found to have silted up considerably, and the drainage channels of all the villages connected with it are found seriously obstructed.

The station of Baraset, once a very healthy place, is a case in point. The Sootee River which received the drainage of the place has silted up considerably, the drainage channels connected with it have become narrow and choked up, and during the rains the waters scarcely find a vent. Within a village itself the drains connected with the main drainage channels often fail to serve the purposes for which they were constructed. When the process of embanking the side lands goes on during the dry season, a person thinks more of his land than of the public drain, and is not slow to encroach upon the latter. Such portion of the earth of the embankment, as has been carried away during the previous rains, and has not been deposited in the drain, is made up by a deeper cut into the bed of the drain, and thus while the drain becomes narrower, it becomes deeper as well. The roads which the villagers construct are meant to save them and their cattle from sinking knee deep in the mire. The only idea the people have of road-making is to pile earth upon the track, and while the side drains are dug into deeper and deeper, a proper water-way across the roads is hardly, if ever, thought of. Again the drains themselves do not, even in the best of the places where they are crossed by the village roads, run

uninterrupted all through the villages. The passages leading from the public thoroughfares to the ryots' homesteads are generally solid passages, if I may so call them; the drains in these places are scarcely, if ever, crossed by culverts of masonry or even of ordinary wood, in fact the drains have never perhaps been carried through these passages; the result is, the village drains are seldom continuous.

The above are some of the facts connected with the drainage of villages. Whenever all or most of these facts exist, the effects can be more easily imagined than described. During the rains, the waters accumulate in the village drains and in the main drainage channels. By the time they disappear from the drainage channels, more is absorbed in the village than what is actually drained out of it, and even then sufficient is left in the deep and unconnected cuts of the village drains to lend additional dampness to the ryots' homesteads.

The drainage of each particular homestead is often found to be in an unsatisfactory state. Whenever a new house is erected in the homestead or the mud-walls of an old one are repaired, the earth required is dug from the nearest place available. Though these works are taken in hand at a time when the ryots have very little agricultural work to do, when the ryots' personal labour is available, and when hired labour is cheaper than in the busy season of the year, still no efforts are ever made to bring the earth required, from a place where an excavation would not prove a nuisance, but on the other hand might prove advantageous. The consequence is that in accordance with the requirements of a household, holes more or less in number are spread in close proximity to the houses,—holes which are filled with water during the rains and with the refuse and sweepings of the homestead in other seasons.

That, under the circumstances and conditions above described, though described imperfectly, villages should suffer from a chronic state of dampness and its consequences, is not surprising.

The conservancy of villages is another matter which may deserve some attention.

The disposal of night-soil is a question of serious importance in towns and cities; in villages it is left to nature. It is said that in primeval times the ordinance on the subject required that a person should proceed a considerable distance out of the village,—a distance greater even than what could be reached by an arrow shot from the village, scrape out a hole wherein he was to answer his call of nature, and then cover up the deposit with earth.

We had here, perhaps, the origin of the dry-earth conservancy system talked of some time back and practised in all jails. The principle involved in the saying was simply this : That the village and its precincts were not to be contaminated and that the night-soil was not to be left to fester and decompose under the rays of a tropical sun. In villages, even at the present day, the requirements of nature are answered in the open air ; but, as with the increase of population, the habitations of men have increased in numbers and cultivation has spread, the field has become circumscribed, and the sides of tanks and roads are freely used by the lower sections of the community, while the better classes resort to secluded spots in gardens, among clusters of bamboos, or by the sides of ditches.

A large tank or reservoir of drinking water is usually situated outside a village, having generally an open space round it which serves as a water-basin. This space is surrounded by embankments topped with trees, and these embankments, wherever accessible, often serve as the most convenient places to resort to for the purposes indicated. So the ditches bordering on garden lands are often connected with ponds and tanks for the purposes of letting in and out water at different periods of the rainy season. The effect is, that the decomposing night-soil is left free to poison the air, to foul the water-basins of reservoirs of drinking water, and doubly contaminate the waters of ponds and tanks, often otherwise rendered impure.

The refuse of the cow-house, the sweepings of the homestead, in short all sorts of leavings, are generally utilized by the ryot. They go a great way to help him in manuring his fields, but before they arrive at a state in which they can be fit for being used as manure, they are allowed to rot and fester in chance holes or on the open ground in close proximity to the house, or by the road side, where they cannot but prove to be serious nuisances.

No effort is ever made to keep the small private tank or pond, usually seen close to the homestead, clean. Never properly excavated, or if ever excavated to a sufficient depth in the first instance, never perhaps re-excavated afterwards when necessary, it becomes a receptacle of all sorts of filth accumulated therein for years. During the rains the refuse of the cow-house, the accumulating night-soil in the ditches, the decomposing vegetable matter in the adjoining grounds, are washed into it ; during dry weather the luxuriant vegetation around contributes to it no end of decayed matter ; at all seasons it is a permanent sink wherein all manner of dirt is washed. The water of these tanks is at once used for culinary purposes and the purposes of ablution.

These tanks do not perhaps prove as harmful as they would otherwise be, only because the fish ordinarily preserved in them consume a great portion of the accumulated filth, and the plentiful crop of weeds and water-plants usually found in them receive their sustenance from it. These weeds are an index of the pestiferous nature of the water in which they grow, just as a luxurious under-growth of vegetation on land is an index of its dampness. The removal of the weeds can but very partially help in improving the tanks, just as the cutting down of small jungle cannot, except very faintly, help in rendering a damp soil less damp. In the former case a new crop of weeds springs up, to feed, perhaps, more vigorously on the under-lying dirt than the old crop did, and in the latter case fresh vegetation arises to absorb the damp moisture of which the old had surfeited. In both cases the sources of evil remain.

Obstructed drainage and the consequent dampness of the soil have come to be considered by some high authorities as the causes of the fevers which have done so much injury to the country, but it may be a moot question for the serious consideration of our scientists, whether other causes are not equally at work. It has been seen that in villages there is not only obstructed drainage, but the most mischievous conservancy arrangements. There was death in our open sewers in Calcutta, our scientists said, but nevertheless persons were often seen to sit by them for hours, even to sleep over them night after night, exposed to the influences of the miasma in blissful ignorance of the fatal truth. Nobody however found what number of deaths or of diseased livers or enlarged spleens was the consequence. There is death in the accumulated filth of our privies, the medicos say, but notwithstanding that these preserves ceased for weeks and weeks to be fields for the display of the hardihood and valour of our knights of the broom, the health of Calcutta, it is reported, was never so good as during the period referred to. Whether the effect of this accumulation was not to tell on public health in some form or other not easily discernible, is more than I can presume to say. After all it may perhaps be asserted with some degree of confidence that a *combination* of causes, and not one cause alone, often serves perhaps to undermine the human constitution. The decomposing vegetable matter abundant in villages, the festering night-soil, the putrid filth in the beds of tanks, after causing such injury as may result from superficial exhalations therefrom, might find their way into the sub-soil, and the accumulated poison of years might at certain periods find its way into the atmosphere, along with the miasma

which a soil surcharged with moisture sends up during the first dry months of a year, and thus help vigorously to spread disease and death around.

The water supply of villages, for purposes of drinking, is a subject of great importance to the well-being of villages. During the last drought, the apprehensions of a famine of food were followed by apprehensions of a water famine. In Madras and Bombay of late similar apprehensions existed.

One single small tank in the compound attached to the subdivisional quarters at Busseerhat was rendered almost dry from the supplies which were drawn from it by the inhabitants of some six villages adjoining the station, while a very large tank lay at a short distance, choked with weeds, totally unfit for use. In former days an idea of public benevolence, or of a sense of duty to his tenantry, often induced the wealthy man or the landholder, Hindu or Musalman, to undertake the excavation of large tanks for the use of the public at large or of the ryots on his estate. Properties have changed hands, have become divided, or the owners have become impoverished, and many of these tanks are neglected or in a state of utter uselessness. New proprietors cannot be expected to interest themselves in works which lent a reputation to the names of their predecessors; co-sharers are often found unwilling or unable to join with other sharers in the work of improvement; and poverty is often a positive bar. On the other hand, demands on a man's purse have increased in several ways with the march of civilization, public beneficence takes manifold forms, public projects are many and various; and all who are really benevolently inclined, all who are truly public-spirited, all who have a name to make or a reputation to gain, must give away largely from what they have. The prices of labor and produce have also increased, and there are fewer works now undertaken to provide a supply of water sufficient to replace that which has been lost. The spirit of benevolence has not died out; but it has received a serious check. When the failure of the crops during the last famine set free a good deal of labour usually employed in the fields, when labour became much cheaper than before, when advances could be had from Government, though strictly none could be given for tanks of drinking water, it was a noticeable fact that the excavation or the re-excavation of tanks was taken up in many a quarter with the greatest alacrity. The efforts however which were then made on this behalf have ceased to a great extent, and a good water supply in villages is still a desideratum. The water supply is not only insufficient in many places, but it is positively deteriorating in quality from neglect and accession of offensive matter.

The use of impure water is said to be the cause of cholera, though perhaps nothing is yet known for certain of the causes of this fell disease. The introduction into this city of the filtered water from Pulta was attended at first by a very sensible fall in cholera cases. Whether these two facts acted as cause and effect has not been ascertained. One thing, however is certain that, notwithstanding the continued use of this water, cholera cases have increased. It may here be noticed that at first there was a rather over-sufficiency of water, which was followed by a fitful or uncertain supply. Perhaps in this country an ample supply is as much necessary for health as a pure one. In the absence of means for storing the filtered water for use on all occasions, many people are obliged to draw their supplies for the purposes of ablution, and even of cooking, from other sources, and the increase is now ascribed to the use of foul water found in the bustees. Anyhow, a sufficient supply of good water is essentially necessary, and in this respect there is a great want in many villages in the interior.

It would be a work of supererogation on my part to describe a village house after the graphic description we have had of it in "Rustic Bengal" from the pen of Mr. Phear, who quietly and without ostentation, did much to benefit the people of this country, who was naturally looked up to with feelings of gratefulness, and whose departure from this country must be deeply regretted, even by those who had not the good fortune to know him personally but, who always heard of his exertions in the cause of native improvement,—exertions shared in by that estimable lady, his wife, who has left the impress of her large sympathies and warm-heartedness in the cause of the advancement of native women, on many a feeling heart. I shall only refer to the houses of the ryots to indicate how far the accommodation provided in them is conducive to health.

The single houses of labourers or of the lowest class of ryots, have generally one door only, leading from a small verandah in front, if there is a verandah at all; large houses or apartments have generally one door in front and one at the side; windows are rarely met with, except in the very best houses. The doors in the inferior classes of houses are of mat, in houses of a superior order, of wood; where the walls are of mud, as is mostly the case, there is very little ventilation except through the door; where they are of slit bamboos, as in some of the Eastern Districts of Bengal, there is certainly a superabundance of it, and the houses are not proof against the cold blasts of winter, or the damp easterly winds of the rainy season.

The houses have a lesser or greater height of floor according as they are of an inferior or of a superior description, or according as the village is less or more subject to inundations; the plinth, the verandah, and the floor of the room is *leaped* every day with a mixture of water, earth and cow-dung, and this process, now adopted in the jails of Bengal, helps to keep the rooms comparatively dry, at all events much drier than they would otherwise be.

The accommodation available in houses, owned by persons who cannot afford to have separate houses for all their needs, is oftentimes shared by poultry and goats, and even cows. On one side of the room there is generally a raised bamboo platform on which a receptacle for holding paddy is usually seen; underneath this platform one may find quietly ensconced for the night a goat and her young ones; if the owner is a Mahomedan, one may find there a hen coop as well. One half of the room is generally left vacant to hold a bed if necessary, but this bed oftener finds a place in the open verandah, and the consequences of insufficient ventilation and close proximity to where cattle are kept, are avoided. If a cow or heifer is kept, it is accommodated in an enclosed portion of the verandah. Even in houses of a superior description the verandah often serves as a sleeping place. This is as much to avoid the heat of a pent-up room, as to find accommodation for members of a family who cannot all be conveniently or decently put into such place as is available.

The cooking is mostly done in the open air, and the pots and pans are daily stowed away in a part of the house or in the cook-room, where there is one. In wet weather the fire place is removed to the verandah, when there is no separate cook-room. In this way cooking becomes less injurious to the health of the inmates than it would otherwise be.

The bedding in the lowest condition of life consists of a mat and a piece of wood for a pillow, where one made of old rags is not available. Amongst the better class of ryots a slight improvement only is perceptible; the mat, here serving as well as in the other case for a bed, is of soft rushes; and the pillow, black and slimy with age and oil, is always to be found; a quilt of rags may sometimes be put over the mat to lend additional comfort. Musquito curtains are eschewed. The people mostly sleep on the ground, and apart from the effects of the dampness of the floor, however modified that may be by the *leaping* which it receives, the ryot is subject without let or hindrance to the visits of poisonous reptiles to whose fangs he falls an easy prey.

Before leaving this part of the subject I may here add that the approaches to the tanks and ponds, close to a homestead, are never properly fenced or guarded, and the extavations near the house become little pools of water during the rains: little children left to themselves, while the mother is busily employed in her household occupations, sometimes meet with a watery grave.

The food of the ryot is of the plainest description. It consists mainly of rice, pulse, vegetables and greens, some grown by himself: fish, if he or his wife cannot catch them, and sometimes vegetables he buys from the hât on market days. An able-bodied labourer consumes, as a rule, a seer of rice; his wife nearly, though not quite, as much; and the children from a little below a quarter to half a seer, according to age. This quantity includes what is required for being parched to serve as dry breakfast or luncheon.

In a family consisting of man, woman and three children—this may be considered a fair average—the quantity of rice required for the day is nearly three seers: this costs at 21 or 22 seers the rupee, the usual price during a fair season, a little above two annas. Reducing this price by one-fifth for paddy husked at home, the cost of rice may be taken to be $1\frac{3}{4}$ annas. No more pulse is consumed than can be bought for a pice. The salt costs half a pice, oil a pice, and condiments, consisting of turmeric, chillies and sometimes onions, half a pice; to this may be added a pice worth of fish on an average. The whole comes up to $2\frac{3}{4}$ annas a day. He has other expenses besides: he has to provide for his house and he has to provide for his clothing, and he just keeps body and soul together at $3\frac{1}{4}$ annas a day. As the price of rice advances, the labourer dispenses with such fish as is to be bought, he dispenses with pulse, and even with a part of his oil and condiments: he eventually reduces his daily allowance of rice, putting himself and his wife and children even on short rations.

He can bring down his daily allowance to 2 seers a day: supposing the price of rice rose to 13 seers per rupee, the cost less one-fifth for home-made rice would be two annas, to which must be added two pice for salt, oil and condiments, and the total would be $2\frac{1}{2}$ annas. With the price of labour down at $2\frac{1}{2}$ annas a day, he will have arrived at a state when a further rise will make him begin to starve. I may here add that these lines were written long before the discussion which has lately arisen regarding the subsistence wages of famine labourers in Madras, arose. I have given simply the results of my own experience in the matter.

The clothing of the labourer and the ryot is scanty. He requires three *dhoties* at the least, and two napkins during the year. His wife requires two *sarees*. The yarn is made at home. The *dhoties* cost 8 to 10 annas apiece and the *sarees* 12 annas; the napkins cost 3 annas each: the children ordinarily go naked. The whole costs on an average Rs. 3-8. For especial occasions the ryot has a *dhotee* and a *chadder* of madapollam, costing about a rupee, and the wife has a printed *saree*, costing as much. The children have a piece each, costing say 5 to 6 annas, and the whole expenditure may come up to Rs. 6 on the whole for the year. The covering for the winter is generally a quilt made of old clothes sewn together. I have never met with a quilt of cotton-wool except in the houses of the most substantial ryots. The ryot has certainly not a redundancy of clothing.

These are a few facts connected with the health of village communities: other facts bearing on this subject must have come under the observation of gentlemen having experience of village life. A collection of all such facts may draw the attention of philanthropists to such circumstances as affect injuriously the condition of the masses; and a discussion, as to the measures which ought to or might be adopted to alleviate such a condition, may eventuate in the well-being of the classes whom I refer to.

Babu SREENATH GHOSE, Roy Bahadur, said:—I have very great pleasure in proposing a vote of thanks to my friend Babu Isser Chunder Mitter for the very interesting paper which he has read. The paper, it is true, is not an exhaustive one on the subject, but it is certainly very suggestive and very useful; and I hope the lecturer will give us his experiences of village life, which cannot but be of great value, in a further paper at some future Meeting.

Babu JADUNATH GHOSE said:—I have very great pleasure in seconding the vote of thanks. As has been already said, the paper is by no means an exhaustive one, and we expect, as the lecturer has promised, to hear the series of papers which treats on the same subject. The facts stated here are of the highest importance to such an Association as the Bengal Social Science Association, and their discussion cannot but lead to very great and good results. The Bengali nation, like most others, lives in the cottage. Hence any faithful delineation of the cottage economy, based upon actual experience gained from freely mixing with the people in their homesteads, must be much more interesting than if the delineator had trusted to the depths of his inner consciousness for his facts and figures to be wrought into graphic pictures for the delectation of his untravelled audience. Now that epidemics and famines and inundations are so frequent in the land, information of the kind contained in the paper just read, possesses much more practical value and national importance than could be presumed from its unpretentious title. If, as they say, to be forewarned is to be forearmed, Babu Isser Chunder drops hints on several subjects which cannot fail to attract the serious attention of all anxious to secure village sanitation and a sufficient supply of food for our rural population.

Babu NOBIN CHAND BORAL supported the Resolution. He thought the lecturer had gone somewhat out of the way in treating the subject which, no doubt, was an important and interesting one. The lecturer had touched upon the subject of sanitation, but he thought that this was a subject more fit for discussion by a Scientific Association than by one for the discussion of social knowledge. But the very able and interesting manner in which it had been treated removed, he was sure, any regret one may have felt at the deviation. Indeed he thought that this paper would prove to be of valuable assistance if brought to the notice of the Municipal Corporation of this city, as the lecturer's views were sound and well worth attention. Reference was also made to the great rise in the price of rice, and the destitution which was expected to prevail in villages. It was undoubtedly within the province of this Association to move in the matter, and to take steps towards checking the large exports of rice to Madras. It was one of the first duties of this Association to do something to alleviate the distress which at present prevailed among Bengal ryots from the rise in the price of rice.

The CHAIRMAN said :—At this hour of the evening I shall not do more than express the regret I feel that my friend, the lecturer, was compelled to defer the reading of his paper to so late an hour. I hope that on the next occasion when he reads a paper he will commence at the beginning of the evening, and that we shall have time to discuss it fully. But, gentlemen, this paper will be printed and circulated to Members of the Association, and we shall all have the opportunity of perusing at leisure the very interesting account of village life which my friend has given us.

I think my friend was right in laying great stress upon the water-supply in villages. For my own part I believe that much more sickness is attributable to a defective water-supply than to obstructed drainage. A great deal has been made of obstructed drainage, but to my mind it has never been satisfactorily established that it is to obstructed drainage, and to obstructed drainage alone, that these malarious fevers, which have proved so terribly fatal, are to be attributed.

I was rather astonished, I confess, at what my friend said in regard to the increase of cholera in Calcutta since the town was supplied with good water. I certainly was under the impression that cholera had decreased in Calcutta since the completion of the water-works. A remarkable instance occurred a short time ago. There was a severe outbreak of cholera at Hastings, but as soon as the water-supply was extended to Hastings, all cases of cholera ceased.

I am unable to agree with my friend who spoke last as to obstructed drainage, not being a question which should be brought before this Association, for I think that anything which affects the health and well-being of the people of this country clearly comes within the province of this Association.

There is only one further remark I wish to make, and that is with regard to the observation which fell from my friend who has just spoken. He has called your attention to the large exports of grain which are now taking place to Madras and he has suggested the propriety of stopping those exports. I read in this morning's papers that for Mysore alone 1,000 tons a day will be required. No doubt these large exports will cause the price of rice to rise in Bengal, but so long as we have grain here to spare, we cannot refuse to send it to famishing people there. We are all one great Empire, and we must all try, to the best of our ability, to bear each other's burdens and relieve one another's distress.

A paper upon Indian Famines, and the best means of grappling with them, and relieving distress when it does arise, would be a most valuable paper to read before this Association ; and if my friend would undertake to read such a paper before us, I am sure he would place us under a great obligation.

3.—*The Origin and Development of Caste.**By the* REV. K. M. BANERJEA, LL. D.

[Read on the 23rd April 1878.]

The subject on which I have promised to read a paper this evening was selected by the Executive Committee—and the word Caste was left deliberately without any qualifying prefix such as Hindu or Indian. I must therefore construe the intention of the Committee to have been *Caste in general*—only with especial reference to this country. I shall accordingly attempt to give effect to the Committee's intention by a few preliminary observations on Caste in general—before proceeding to its special reference to this country, which must be considered the main question.

Caste in its most comprehensive signification denotes *order*. In the language of the poet—

“Order is Heaven's first law and this confest,
Some are, and must be greater than the rest.”

This has been verified in every country and in every age. The Egyptians had it—originally even in a more complex form than the Hindoos of *their time*. The Assyrians had their nobles—with the especial title of Asur. The Spartans had their Helots as the lowest order. The Romans had their Patricians and their Plebeians. The Jews had their Levites and Aaronic priests. The Persians their Satraps, and their Magi, the predecessors of the present Dasturs. The Britons had their Druids; the Anglo-Saxons, Normans and all Western nations their feudal lords and villains. In most cases the superior order was hereditary and depended on birth, in some it was a personal distinction. In many cases the purity of the superior blood was protected by prohibition of intermarriages. But order existed everywhere—whether it were as a caste depending on birth, and prohibitive of intermarriages, or as an order with fewer restrictions and admitting recruits from the lower classes.

In some cases again it was founded on direct religious precepts—and where the institution itself did not pretend to a religious origin, it was still observed as a religious or quasi-religious obligation.

Although human nature was the same everywhere, yet the development of its faculties and powers was unequal. High and low, rich and poor were found in every age and every clime, and were indeed necessary under the ordinary Providence of God. Gradations in society were indispensable for its common welfare. Confusion would inevitably result where only one grade and one class existed. The welfare and safety of a community required certain offices to be severally performed by both high and low, and unless there were a recognized gradation, there would be the greatest inconvenience to all. No one would know what he was expected to do—and all would aspire to what in their wisdom or conceit they would consider *high* callings, irrespective of their own capacities, moral, intellectual and physical, or relatively the superior merits of others. Men were therefore driven to the necessity of an authorized division of labour, and of gradations and classifications—and these, when they became rigidly hereditary, were crystallized in the forms of Caste.

Caste in its rigidity would be an abuse of the principle which required gradations, and the abuse would often prove a greater evil than that which the principle was intended to remedy. But we find there was a safety-valve left even in India, where the principle of gradation and classification soon developed itself into a most rigid system of caste. We find a Kshetriya in the person of Viswamitra promoted to the higher office of the priesthood by virtue of his extraordinary abilities, and a Brahman in the person of Parasu Ram recognized and lauded as a bellicose and terrific combatant—the exterminator of the hereditary order of Kshetriyas.

But I am anticipating the especial subject of the evening to which I must now turn in methodical order.

The Indian idea of Caste is expressed by two words—“*varṇa*” which means *colour*, and “*jāti*” which means *birth*. The former is almost exclusively found in ancient records—the latter appears chiefly in records of a more recent date.

The Rig Veda is admittedly the most ancient of Arian records. The word *jāti* is not found there at all. The word *varṇa* is found, but only in the sense of colour, not of caste. The words Sudra and Vaisya are found only once, and the peculiarity of that *hapax legomenon* shall be shortly explained. The words “Chandála” and “Nishada”, too, expressive of castes subsisting on occupations the meanest indeed, but at the same time the most heedful for

society, though noticed in other Vedas, are not found in the Rig Veda Samhita. Even the word Brahmana, though occurring constantly, is not used (except in one text where the four castes are named) in the sense of a separate caste. It occurs generally in the sense of "sacrificial vessels"¹ or a sacrificial minister—a scholar conversant with all useful knowledge, with Vedic mantras as well as the medicinal properties of herbs and drugs²—at once a divine and a doctor, learned in science and sacred lore, whose title even Vrihaspati, preceptor of gods, was proud to assume, and which was at the same time so incapable of defilement or disgrace that it could be applied in the Seventh Mandala (vii. 103, 7) even to frogs in wells and ponds, provided only they were qualified by learning and devotion like their brothers of Vedic fame. "Brahmana" in fine meant an austere sampler of learning and devotion which was not in the monopoly of any tribe or species—which might ascend to heaven or descend underground, as easily as it finds a place among the *gods of the earth*.

The fact is, that the word Brahmana is derived from Brahma which signified the Veda itself, or Vedic mantras and ceremonies. All those who were conversant with Vedic texts, or competent to take the lead in ceremonies, together with the compilations of ritual rules³ and directions, like the "Rubrics" of the English Prayer Book, and the very utensils used at the altar, were styled "Bráhmanas."

It is asserted in the Sastras that Manu was the survivor of the Deluge, representing Noah or Nu of Semitic records, and that when the ship or boat rested, Manu offered a sacrifice, not unlike what "Nu" had done. Now as the population of the post-diluvian world all sprang from Manu, the presumption is that there could have been no caste at the time. The descendants of Manu were variously called "Manuja," "Mánava," "Manushya," which are all words signifying mankind. The human race was therefore all *one*, agreeably to ancient Arian tradition. The same Manu again had consecrated and instituted the Sacrificial Fire,⁴ and all his descendants were under solemn obligations to maintain that Sacrificial Fire by means of burnt-offerings and oblations. Of those burnt-offerings, the original sacrifice of Manu was the sampler.⁵ Every householder kept up the sacrifices and maintained the sacred fire in his own consecrated room or hearth.⁵

¹ R. V. i. 15, 5.

² R. V. x. 97, 22.

³ R. V. i. 13, 4, 14, 11.

⁴ R. V. i. 26, 4.

⁵ R. V. i. 1, 8.

Now we have just shown that the most comprehensive word signifying at the same time the Veda and Vedic ceremonies and ritual, was *Brahma*, and its equally comprehensive derivative standing for compilations of sacrificial rules, utensils and the ministers themselves, were *Brahmanas*. Hence it is that the most authoritative expositions of the mantras were themselves called *Brahmanas*, and every Veda is found divided into two portions, the *Sanhitas* and the *Brahmanas*. And hence it is also that every householder keeping up the sacrifice instituted by Manu was, as a minister of the same, called a *Brahmana*.

In process of time, as families multiplied and it became necessary to cultivate land more and more for raising human food, it was found convenient to establish an order of Brahmins, who as ministers general might perform sacrificial worship in numbers of houses, and thus by relieving heads of families of the sacerdotal duty, leave them at large for attending to agricultural pursuits. For it must be noted as a prominent fact that the primitive Indo-Arians were distinctively an agricultural community. The manual labour of cultivation, which is now despised as the work of *Chásás* or rustic clowns, was originally held the most honourable of occupations, not even beneath the dignity of gods themselves. The very epithet a *good Chásá* (Sucharsani,) was a title of honour and distinction. Cultivation of land was held to be such a universal duty among mankind, that "Charsani" and "Kristi" were both synonymous with *manushya*, and he was considered the noblest specimen of mankind who was the best tiller of the ground (Sucharsani). Indra himself, who was honoured as *Nripati* or king, and called *Nritama* or best of men, was not ashamed of the epithet *sucharsani* or the best tiller.

The institution of the order of *Brahmanas* was thus owing to the exigencies of a growing society to which the maintenance of sacrifices and the cultivation of the ground were equally necessary. An order of men for defence from wild beasts and external foes would also in time be felt as a desideratum, and would naturally follow; and, as we shall presently see, the military class was instituted in that very way.

With reference to the "*Vaisya*", the word, as we have said, occurs but once in the *Rig Veda Sanhita* in connection with the other three principal castes. But the derivation of the word is suggestive of a consideration which claims a moment's attention. The word *Vaisya* is derived from "*vis*" signifying *people*—the *hoi polloi* of the Arian commonwealth—viz., those who were not competent for the sacerdotal duties performed by *Brahmanas*, and

who therefore attended exclusively to agricultural and other offices producing the wealth of the community. Although they were the populace or the *hoi polloi*, yet they were Arians—the Hon'ble Commons of Ariandom. As long as no caste gulf was interposed between the different orders, they were no other than relatives of Brahmans pursuing secular avocations.

The word Sudra also occurs, as we have said, only in one text where the four castes are named. It is not grammatically connected with any word found in the Rig Veda, from which we might form an idea of the offices afterwards assigned to it. The word "vis" leaves no room for it in the Arian community. It must therefore refer to an *unarga* or non-Arian class. Scholars have generally confounded the Sudras with "Dasyus" who were themselves supposed to have been aborigines of India. We will not stop to discuss the question here, but we are inclined to a somewhat different opinion. Dasyu is admittedly connected with Dása, a word which in modern Sanscrit means a *slave*. In the Rig Veda, however, Dása is used in the sense of destructive or hurtful. It is applied to such enemies as had given more than ordinary trouble to the Arians. It is not in itself a term of contempt, such as the word *slave*. It is rather a word which inspired terror. It comes from the same root as "Dasru" which means *destructive*, and is applied to certain Devas who proved destructive of enemies. We believe Dasyu and Dasru have the same signification—and, as a Persian tribe, probably non-Arian, is mentioned both by Herodotus and the Assyrian records having the name of Dahi, we think Dása meant that tribe (the Persian *h* being equivalent to the Sanscrit *s*). A body of that tribe, hostile to the Arians, may have pursued them in their migration to India, but, being routed, those who were captured were reduced to slavery. The probability is, that these were afterwards classed as a fourth caste under the name of Sudras, with the ethnological "Dása" as their surname, not as a badge of slavery, but rather of distinction, and that they were not a class of the aborigines of India. Had the Sudras been aborigines like the Kols, Bheels and similar tribes, we might have discovered some characteristic common to them in all the provinces of India, instead of finding them so assimilated to the Hindus all over India. Nor would their leading order—the Kayasthas—probably have been so tenacious of their characteristic prefix of "Dása", had it been commemorative of slavery and not an ethnological appellative. There are certain surnames which are common to Kayasthas and some other castes held inferior to them, such as Dutt, Dey, and the like. The Kayastha, if he be a

Dutt or Dey, is always anxious to explain that he is a *Das* Dutt or *Das* Dey. This tenacity exists to this day. Had it been a badge of servitude, why should they evince such anxiety for such a badge? The tenacity of the present day is doubtless owing to immemorial custom—but the original tenacity of their ancestors appears to us to have been on ethnological grounds. As some confirmation of this view I may refer to a passage in the Taittiriya Brahmana of the Yajur Veda in which the Brahmana is called the Daivya Varna, *i. e.*, of Arian race, and the Sudra, Asuri or of non-Arian race.

We shall now turn to that notable verse in the Rig Veda which speaks of the origin of the four castes.

ब्राह्मणास्य मुखमासीद्वाङ्म राजन्यः कृतः ।

ऊरुतदस्य यदश्वः पद्भ्यां शूद्रो अजायत ॥

The following is a literal translation of it : “The Brahmana was his mouth—the Rajanya (Kshetriya) was made his arms—what the Vaisya was that was his hips—from his two feet sprang the Sudra.” We shall presently discuss the antiquity of this verse. Meanwhile its interpretation requires a moment’s notice. The Brahmana “*was*” his mouth—not *made*, nor *begotten* from it. But the Kshetriya was “*made*” his arms. The Vaisya again *was* the same as his hips. The verb substantive “*was*” is not expressed but must be understood. The Sudra sprang or *was produced* from his feet. The Brahmana *was* his mouth, *i. e.*, always *was*—from the beginning as his *mouth*—uttering and disseminating his word and will. The Kshetriya was *not* from the beginning, but in process of time was *made* his arms—for the defence and protection of his people. The Vaisya again *was*, *i. e.*, always existed as his *hips*—the support of his body, while the Sudra was *not* from the beginning, but sprang or was begotten at a certain time from his feet, *i. e.*, was enslaved when captured. The formation of caste was accordingly gradual. The Brahman always existed as a minister of sacrifice ever since the days of Manu, the survivor of the Deluge, who instituted the ceremony. For a time every householder was a Brahman—a priest in his own family—maintaining the sacrificial institution, and keeping up the sacred fire. But a separate order was afterwards instituted for convenience’ sake. So the Vaisya too always existed as the *people*—the *hoi polloi* of Ariandom, working for its sustenance. But the Kshetriya did not always exist. He was in due time *made* the “*arms*” of the Creator for the protection of the community. Similarly, the

Sudras did not always exist—had no connection with Arians from the beginning—but after a war which resulted in the conquest of the Daha or Dasa tribe, those who were captured as prisoners were under the general appellation of Sudras made the slaves of the Arians.

With reference to the antiquity of the 90th Hymn of the 10th Mandala, and especially of verse 12, which gives the preceding description of the four classes, many scholars have assigned the Hymn itself to a much later date than that of the Rig Veda. They have considered it to be a recent interpolation. It is certainly not so old as other portions of the Rig Veda, for it gives the distinctive names of the third and fourth orders which are not found elsewhere. It must have been composed after the arrangement of the four orders. But still although the 12th verse which gives the four orders has scarcely any Vedic peculiarity of grammar or diction, other verses of the same Hymn have some such peculiarities, and the whole Hymn itself may be referred to a later stage of the Vedic period. The Brahmanas of the Vedas contain the names of all the four orders.

The above idea of the gradual formation of the four principal orders as deduced from the Rig Veda is confirmed by the Brihadaranyaka Upanishad,⁶ where we find the same order of formation. At first the Brahmanical order alone existed without any other—no Kshetriya, no Vaisya, no Sudra. The Creator, it is said, was not satisfied with a state of things in which all were Brahmans. So he created Kshetrias. But after a time he again felt that something was still wanting—so he added a third order, the Vaisyas. Again he became dissatisfied, and so at last he made Sudras too. All this means, as we have before said, that in the beginning all householders were priests of their own families. Then the Kshetrias or armed men were set apart for the protection of the community. Vaisyas came as the third class to raise food and create wealth for the sustenance and comfort of the commonwealth. The captive Dasas were subsequently registered under the appellation of Sudras for servile works—as menials and labourers—“hewers of wood and drawers of water” to the Arian state.

The Mahabharat bears testimony to the same dicta of the Vedas ;

न विशेषाऽस्ति वशानां सर्वे ब्राह्मसिद्धं जगत् ।
ब्रह्मण्यै पूर्व सृष्टं हि कर्मभिः वशेतां गतं ॥

“No distinction of caste in the beginning. All, created at first by means of ‘Brahma’ or mantras, were Brahmic. By reason of their offices they became diverse in caste.”

The three first classes were all of Arian extraction. The Sudras were non-Arian Dasas. The three Arian orders were all Dvijas or twice-men—invested with the sacred cord. They are all called the castes of excellent feet *रमणीय चरणः*¹. The Sudras were unregenerate.

The first three orders being all Arians had originally free intercourse with each other; nor was intermarriage forbidden. As long as free intercourse and intermarriage were not forbidden, children inherited their father’s honours and privileges, even if mothers were of different orders. And therefore we do not for a long time hear of the mixed classes.

But restrictions appear from the first to have been put on intermarriages with the servile order—for the Chandalas, though the lowest caste, are heard of before the other intermediate mixed classes. The Chandalas were the first-fruits of illicit union in the Arian community, and that was with Sudras. The sins of parents were severely visited in the persons of their unfortunate children, who were at once looked upon as the dregs of the community—the lowest offices, such as are now performed by Mehters and Domes, being assigned to them.

The three regenerate orders appear to have been allowed, as we have already said, to intermarry freely between themselves, only avoiding social intercourse with the unregenerate Sudras. Illicit intercourse with Sudras, though forbidden by the law of honour, was not visited on the offenders themselves with forfeiture of the rights and privileges of their own order. The unfortunate children only were turned into unhappy scape-goats. But the increase in the number of the Chandalas became in time such a scandal that intercourse of that kind was afterwards rigidly forbidden between *all* the orders. The prohibition did not however succeed. Illicit intercourses still multiplied, and it was found necessary, on the one hand to moderate the Draconian law of classing all children of such intermarriages with Chandalas, and on the other hand to visit with some personal punishment the sins of the parents themselves. The offspring of irregular marriages were therefore eventually classed with a merciful discrimination which led to the rise and progress of those recognized intermediate castes which at present form the back-bone of Hindu communities all over the

¹ Chhandogya, p. 358. A striking resemblance with the passage in Isaiah—“How beautiful upon the mountains are the feet of him &c.” lii. 7.

country. The classification is too large to be given here in detail without tiring your patience. Its general principle, though with many whimsical exceptions, may be stated in a few words. The children of irregular marriages were of course not allowed to inherit the privileges of the parent that was of the higher order, but they generally got a step above that of the parent of the lower order. Thus the Ambostha or the medical caste, said to have descended from a Brahman father and a Vaisya mother, occupies an intermediate position between the two; the Karan or Kayastha, from a Vaisya father and a Sudra mother does the same.

The rule against intermarriage is now so strong and rigid that persons committing it at once forfeit their own position in society, and their offspring becomes wholly outcast. Intermarriages in point of fact never take place now, except in the case of those who openly repudiate and renounce caste altogether.

Except the Chandalas, Sweepers, Chamars and some others occupying the lowest positions in society, every intermediate caste of the present day occupies a higher place than was allotted to the Sudra by the legislator who passes under the name of Manu. In fact the Sastrie Sudra is now entirely extinct. The Brahmins of course exist everywhere, but in Bengal at least the Kshetriya is also almost extinct. The Burdwan Raj is a pure Kshetriya family of the solar line, but it is not an indigenous Bengal family. The Vaisya is also supposed to be extinct in Bengal. But—*pace* our national prejudice—I must confess that the Baniks appear to me to have all the Sastrie characteristics of the Vaisyas, and to be the lawful descendants of that order.

Before the creation of the four orders, the Vaisyas, representing the Vis or the Arian populace, had all secular offices as their proper duties. They had charge of pasturage and agriculture and all the arts of life—and, so far as “money” was understood or introduced, they were also Bankers. On the institution of the Sudra caste, the Vaisyas were relieved of all meaner and servile work which required manual labour; and on the multiplication of the mixed classes, they were again relieved of much of the mechanical arts, which were distributed among carpenters, weavers, goldsmiths, blacksmiths, potters, braziers, &c. The Vaisyas then followed the pure occupation of Bankers and merchants, and began to be called “Baniks,” their occupation being named “banijya” or commerce. They became in fact the commercial class of the Arian Commonwealth. And this must have been as early as the days of Valmiki himself. At the end of the first chapter of the Ramayana, the poet says: “A twice-born man (Brahman) reading of the acts

of Rama becomes an orator—one of Kshetriya birth, a king—the ‘*Banik*’ (meaning the 3rd order) succeeds in his merchandise—and the Sudra on hearing them (for he was not allowed to read) becomes great.” Here the Vaisya is distinctively called “*Banik*.”

Now there is no other claimant for the third order, especially in Bengal, except those who are in common parlance called “*Baniks*.” If they are not allowed their proper position in society as the third order, it can only be attributed to jealousy. Bengali tradition attributes that jealousy to king Bullal Sen. Whatever the cause may be, a critical exposition of the earlier Sastras must convince the impartial inquirer that the *Baniks* of our day represent the Vaisyas of old, both in name and in occupation.

Caste can scarcely be called an exclusive religious institution though in some respects it is religiously observed. The bulk of the population is composed of mixed classes in which our astute legislators left no recognized gradation. Except that all revere the Brahmans, there is scarcely any class that will admit its inferiority to another. There is therefore no danger of aspiring after promotion from one to another. Every one keeps patiently to the offices of his own class.

English education and intercourse with Europeans have however effected great changes. The contentment with which a person kept to the duties of his own class scarcely exists now. In this transition state, society is evidently very much convulsed. But whether it be from a religious or a social point of view, my own conviction is, that the subject requires to be dealt with most delicately. It is doubtless an evil, but an evil the sudden or violent eradication of which may produce a far greater evil than its own most malignant form, and the remedy may prove worse than the disease.

DR. K. McLEOD said:—I am sure we have all listened with very great pleasure and interest to the Rev. lecturer's most lucid exposition of the origin and development of caste. He has certainly, considering the brevity of the paper, described the matter and placed it before us in a very clear light, more clearly than I have ever had an opportunity of having it placed before me on any previous occasion. I think he makes two things very plain, first, that caste essentially consists of social gradations developed and maintained for the purpose of social convenience and division of labour, and he also shows that although caste apparently was originally a purely social contrivance, it has degenerated into a system of class distinctions which do not now acknowledge the principles upon which it was originally founded. Now it is impossible to deny that caste, in a more or less pronounced shape, has existed in every country and community which has made its mark upon the world's history, and that it exists now among the more prominent nations which make up the

sum total of the civilization of the present day; and the real question, I apprehend, is as regards the basis of caste and the degree to which caste distinctions are permitted to govern the feelings and acts of mankind. If caste depended upon refinement; if caste depended upon culture, if caste depended upon intellectual capacity, nay, even upon capital, property, or the social importance of the individual, then there is nothing to be said against caste, nor even against hereditary caste, if, as I believe is really the case, such qualities and circumstances are transmitted by heredity. But there are, to my mind, more important principles governing the thoughts and acts of men than such social or caste-distinctions, even when founded on the qualities and circumstances I have mentioned, involving a large number of high social duties higher than caste-obligations, and these latter, I fear, have been allowed to become supreme when they are really only subordinate. There is in the first place one common humanity which necessarily involves relations between man and man and compels duties of man to man, the exercise of which must demolish rigid class-barriers. Then we have a common animality. In common with all organised creation we possess certain common functions and faculties, and live under certain common conditions involving sundry affinities and mutual obligations; and anything in caste which violates or transgresses these laws of our general animality is that which caste ought to be ashamed to own and revere. I might allude to other general social obligations connected with religion, politics, education, commerce, &c. &c., which occupy a higher place in the scale of human motives and ought to possess a greater power than caste rules.

But I would wish to put in a special claim for that profession to which I have the honour to belong, and of which I am proud to be a member. The claim is this—that no profession that has flourished in India, and the medical profession includes a large section of the educated native community, has done more for the removal of these absurd and unnatural caste distinctions which prevail in this country than the medical profession. Sickness knows no caste. Persons of the highest caste are equally liable to it with persons of the lowest caste. The forms and types of diseases affecting persons of the highest caste are the same as those in men of the lowest caste; and so it has come to pass, that those who are devoted to the study of medicine—and they are now a very large class—have been compelled in the exercise of their profession to see practically that these class restrictions are incompatible with the exercise of their profession. Accordingly you will find that Hindus of the highest as well as of the lowest castes, Brahmans, Chuttees, Vaisyas, and Sudras, are associated with Mahomedans, Christians and Jews in the performance of offices—many of them repugnant to caste prejudices—necessary for the study of medicine and the relief of the sick.

In conclusion I can but reiterate the views which I have already stated, *viz.*, that while caste distinctions have their social reason and use, they should not be allowed to acquire in any community such a degree of strength as renders them incompatible with the due performance of the duties imposed upon us by a common humanity, and I may add by our common position as children of one God and the descendants of one Father.

BABU NOBO GOPAL MITTER said:—Gentlemen,—The word of caution expressed by the learned lecturer in the concluding portion of his paper ought to be duly weighed by us. The institution of caste is one of long standing in this country. Whatever may be said as to its baneful effects at present, that it afforded a strong check to the growth of immorality and vice in the midst of Hindu society, admits of no question. Not very long ago a corre-

spondent of the *Statesman*, writing from Assam touching the institution of caste, gave vent to the following expression of opinion on the same :

“It is surprising what an influence caste has among the half savage people. It is the greatest moral ruler, without which the country would be a moral pest-house. It possesses an influence which one does not find in other lands under their vaunted civilization and religious culture.”

In this part of our country, when the orthodox system was in favour, caste exercised a potent sway in repressing the vice of intemperance and other crimes. Now we are educated—now we boast of association with men who have received the most refined culture, while at the same time we are under a good and paternal Government—now under all these favourable circumstances we are unable to cope with the evil which is fast creeping into our society—I mean the habit of intemperate drinking and other concomitant evils resulting therefrom. Therefore I say to my educated countrymen—Before you proceed to demolish the institution of caste, create in the midst of your society such a moral power, such a higher spiritual force, which, while enlightening your minds and souls, would be a mighty instrument in your hands to check every kind of social vice and disorder. Therefore I say to my educated countrymen—First exert your mind and soul to establish among yourselves something better and higher than the institution of caste, and then think of dispensing with it.

BABU KALIMOHUN DASS spoke as follows:—Mr. Chairman, Ladies and Gentlemen,—I am an *ambostha* by caste and therefore belong to the class of physicians to which allusion has just now been made by the learned Doctor whom you have heard. I am also a *Das*. Under the circumstances I hope you will pardon me for making a few remarks on that portion of the lecture which concerns my caste and bears upon my family name. What you have heard on these points is likely to influence your estimate of an *Ambostha* and *Das*.

It has been said that the word *Das* is the same in substance and effect as the word *Dasyu* (दस्यु). With due deference to the opinions of the learned lecturer, whose opinions are entitled certainly to very great weight, I would take the liberty to offer for your consideration certain arguments which appear to me to affect the value of the conclusion to which the learned lecturer has arrived on this point. In the first place, the family name of *Das* is in use amongst men of different castes, it is not used by the Sudras alone. It is undoubtedly used by the *Ambosthas*, for I am one of them; it is also used by the *Kayasthas* and *Shichs*. I can name several who belong to one or other of these castes but still call themselves *Das*. Now if *Dasyus* are no other than those aboriginal inhabitants of India who took arms against the Arians or Arjyas (अर्य) and being conquered in war were reduced to the condition and position of Sudras who are called *Dases*, how happens it that others (who certainly were not *Dasyus* whatever else they may be) there are who go by that name? It is therefore quite clear that the mere fact of a Sudra being called a *Das* is certainly not an argument for holding that a *Das* means one who was a *Dasyu* (दस्यु).

Apart from this consideration, there is another which throws a good deal of light on the enquiry before us. The Institutes of Manu prove that *Dasyus* are a separate class of men from the Sudras, and do not belong to any of the four castes said to have been created by Brahma from his mouth, his arms, his hips and his legs. They also prove that the four primary or principal castes were created at the same time out of the different parts of his body by Brahma. It is thus quite clear to my mind that the word

Dasgu should not be confounded with *Das*, and that there are reasons for not accepting this conclusion of the learned lecturer.

The statement given in the *Manu Sanghita* as to the origin and creation of the four primary castes, means perhaps nothing more or less than this, *viz.* that, in the opinion of the great Hindu sage, the division of the people into four castes was the result of the will of Brahma, and was owing to the necessity of a division of social duties, avocations and labour between the thinking class, the military class, the merchant class, and the industrial or working class. It is as necessary for the well-being of society as it is of an individual that there should be a मुख, बाह, ऊरु, पद—head, arms, thighs and legs—in one and all of us. The Brahmins represent the मुख or head or brain of society—their function was to think and speak for others; the Kshatriyas or military class are as necessary for the defence of a country as arms or बाह are for individuals. The functions of the other two classes hardly call for any remark.

Passing on to another portion of the lecture I find that the lecturer maintains the opinion that the सुवर्ण वंशिक or Banias are the same as the Vaisyas (वस) of old, and that their present condition is owing to the jealousy and influence of Raja Bullal Sen. Raja Bullal Sen was a Raja of vast resources and unbounded influence and might. His will was law and was looked upon as the source and fountain of honours and titles, and these, though bestowed with a free and liberal hand, were seldom if at all given to the unworthy.

The institution of Kulinism dates from his reign, and is now a prime curse from several social points of view, as an institution which has survived generation after generation. Ask a Kulin *Kayasth* the number of generations he has been a Kulin, and a good many of them will feel proud in giving 27 or 28, as the number of generations during which they have been Kulins. Dr. Rajendralala Mitra not excepted. That a king who could lay down laws regulating social position hereditary in its incidents would be able, if willing, to reduce a caste to a degraded social condition, is possible; but whether he did so is another question. Where was the motive? Raja Bullal was an *Ambohtha* in caste, and my castemen take a pride in his name, but they are not prepared to accept this explanation of the degraded social standing and caste of the *Banias*; they are not prepared to allow that the caste of *Vaisyas*, to which caste they are related on their mother's side, is at present reduced to the condition of isolation of social exclusion occupied by the सुवर्णवंशिक of the present day.

THE VICE-PRESIDENT (MR. BEVERLEY) said :—I am sure we are all very much obliged to the learned lecturer for the trouble he has taken in writing and delivering the interesting paper we have just listened to, and I will not detain you longer than to add one remark to what you have already heard. Dr. Banerjee's paper has treated of the "origin and development of caste," and I think it would be at once interesting and instructive if that paper could be followed by one or more others exhibiting the condition of caste in the present day. More than one of the speakers has advocated the retention of caste distinctions. I think there are some of us who would be glad to know the reasons on which this opinion is based—in other words, what are the practical uses and advantages of caste in the present day.

I have lately had the honour of sitting on a Committee which was appointed by Government to consider the manner in which the next Census of India should be carried out, and one of the questions which we had to consider and report upon was, whether enquiries should be made on the subject of the

castes of the people. You are aware that at the last census very minute researches were made into this subject, and a vast amount of information was recorded in the various provincial Reports. I am not aware whether any of you have ever waded through that mass of information, but what we had to consider was, whether there were any practical considerations to warrant us in going over the same ground every ten years or so—whether there were any reasons why statistics on this subject should be collected and published periodically. I may say that we were unable to assign any practical utility to enquiries of this nature, and although we recommended that enquiries into caste should be made in the case of the next census, we expressed an opinion that such enquiries seemed to us to partake more of an antiquarian than of a political interest. Whether caste be regarded as originally equivalent to tribal distinctions, or whether it be regarded as a great scheme for the division of labour, certain it is that under neither head would it afford any accurate data in the present day.

A suggestion was made from England that the census returns should only show what are known as the four castes of *Manu*; but this suggestion we had no hesitation in rejecting, because it seemed to us that even supposing there was any suggestion of probability that any such fourfold division of caste ever existed,—and I gather from the learned lecturer's paper that he at least is not of that opinion,—in the present day all traces of it have almost entirely disappeared. Caste distinctions have been much obliterated of late years, and are no doubt dying out before the spread of education. The question is, whether, unless there is some practical object to be gained by investigations into this subject, such investigations may not tend to retard social progress and give a fictitious importance to a state of things which if left alone must yield to the influence of civilization.

So that, if some of you would come forward with a paper on this subject showing the position which caste occupies among the Hindus at the present day, and the supposed advantages to be derived from its continued existence—showing also, if you can, the practical use that could be made of periodical statistics on this subject—such a paper, I think, would be of the very highest value and interest.

Mr. Beverley concluded by conveying the thanks of the meeting to Dr. Banerjea.

MR. H. BELL (who came in a late stage of the meeting) spoke as follows :—

Before the proceedings of this evening terminate I hope I may be permitted to say a few words. I have had the honor of holding for two years the post of Vice-President of this Association, and I have to return my sincere thanks to the many friends whom I have made while holding that office, for the very kind manner in which they have borne with my many shortcomings. But my regret at being at last compelled to resign the office of Vice-President is considerably mitigated from the fact that there will sit in the chair which I formerly used to occupy, a gentleman who will do far greater credit to the Association than I have done. And I ought to remind those gentlemen who have only recently joined this Association, that Mr. Beverley has been connected with our Society from its very commencement. In the palmy days of the Association Mr. Beverley was the Secretary, and I have no doubt that the ability which he displayed as Secretary will be continued in his present high position as Vice-President. I must permit me also to say that you must not leave your Vice-President to do everything. If this Association is to be a success, it can only succeed by every member doing

his utmost to promote the interests of the Association. I hope that the members present will bear in mind the suggestions of the Vice-President with regard to papers, for it is absolutely necessary if this Association is to continue, that members should come forward and supply us with papers.

With regard to the question of caste, I have no doubt a very interesting paper could, as suggested by Mr. Beverley, be prepared, but I must confess that I am one of those who have somewhat conservative tendencies, and who would be very sorry to see any sudden or violent change.

To remove the abuses of caste, to mitigate its prejudices and break down the barrier which it opposes to the advancement of the people, is a work of time; and in the hands of time we may safely leave the issue, when we contemplate the enlightenment which is dawning on the country by the general diffusion of knowledge among the people.

